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FEDERAL BUREAU OF INVESTIGATION
FOI/PA
DELETED PAGE INFORMATION SHEET
FOI/PA# 1229190-0

Total Deleted Page(s) = 1
Page 44 ~ Referral/Direct;

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Office Memorandum • UNITED STATES GOVERNMENT

TO : Mr. R. T. Harbo *RH*

DATE: August 20, 1952

FROM : I. W. Conrad *IWC*SUBJECT: TOLL LINE FOR RADIO AND ELECTRICAL SECTION

Reference is made to the Executives Conference memorandum to the Director dated May 29, 1952 regarding Research Project Technical Surveillances.

Arrangements have now been made through a confidential informant of the telephone company to obtain 3 different types of telephone pay-type instruments normally referred to as coin collectors. In order to continue the project further under all standard conditions, it is now necessary to obtain a toll-type line under the control of Laboratory personnel to complete the test in these collection instruments.

RECOMMENDATION

It is recommended that arrangements be made through the office of Chief Clerk to obtain a telephone line for connection in room 7314 for coin collecting service.

RFP:vrh *vrh*

Tolson	_____
Ladd	_____
Clegg	_____
Glavin	_____
Nichols	_____
Rosen	_____
Tracy	_____
Harbo	_____
Belmont	_____
Mohr	_____
Tele. Room	_____
Nease	_____
Gandy	_____

*order written by Mr. Simpson
C. + P. Reg. 9/9/52*

SE-36

180-781-
RECORDED - 16 SEP 10 1952
INDEXED - 16

EX-129

SEVEN *R28*67 SEP 22 1952 *67**R28*

Toll Line and Fire Alarm Series Instruments

DATE OF REMOVAL _____

DATE OF MAIL

9/18/52

HAS BEEN REMOVED FOR MR. LAMPHREY TO BE KEPT PERMANENTLY IN HIS
OFFICE, ROOM 1736

SEE FILE 66-2554-7530 FOR AUTHORITY.

SUBJECT

JUNE MAIL

REMOVED BY

60 OCT 2 1952

FILE NUMBER

80-781-2

PERMANENT SERIAL CHARGEOUT

DATE OF MAIL

10/27/52

HAS BEEN REMOVED FOR MR. LAMPHERE TO BE KEPT PERMANENTLY IN HIS
OFFICE, ROOM 1736

SEE FILE 66-2554-7530 FOR AUTHORITY.

SUBJECT

JUNE MAIL

REMOVED BY

60 NOV 21 1952

FILE NUMBER

80-781-3

PERMANENT SERIAL CHARGEOUT

619

DATE OF MAIL

10 / 30 / 52

HAS BEEN REMOVED FOR MR. LAMPHERE TO BE KEPT PERMANENTLY IN HIS
OFFICE, ROOM 1736

SEE FILE 66-2554-7530 FOR AUTHORITY.

SUBJECT

JUNE MAILREMOVED BY 51 DEC 23 1952FILE NUMBER 80-781-4

PERMANENT SERIAL CHARGEOUT

DATE OF MAIL

11 / 4 / 52.

HAS BEEN REMOVED FOR MR. LAMPHREY TO BE KEPT PERMANENTLY IN HIS
OFFICE, ROOM 1736

SEE FILE 66-2554-7530 FOR AUTHORITY.

SUBJECT

JUNE MAIL

REMOVED BY

51 DEC 23 1952

FILE NUMBER

86-781-5

PERMANENT SERIAL CHARGEOUT

DATE OF MAIL

12 / 16 / 52.

HAS BEEN REMOVED FOR MR. LAMPHREY TO BE KEPT PERMANENTLY IN HIS
OFFICE, ROOM 1736

SEE FILE 66-2554-7530 FOR AUTHORITY.

SUBJECT

JUNE MAIL

REMOVED BY

51 DEC 23 1952

FILE NUMBER

80-781-6

PERMANENT SERIAL CHARGEOUT

DATE OF MAIL 9-11-53

HAS BEEN REMOVED FOR MR. LAMPHERE TO BE KEPT PERMANENTLY IN HIS
OFFICE, ROOM 1736

SEE FILE 66-2554-7530 FOR AUTHORITY.

SUBJECT JUNE MAIL

REMOVED BY 59 OCT 1 1953

FILE NUMBER 80-781-7

PERMANENT SERIAL CHARGEOUT

SAC, New York (66-1403A)

July 1, 1960

REC-27

Director, FBI (80-781) 8

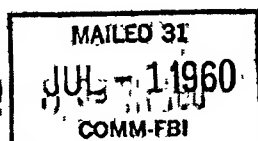
**CONFIDENCER MICROPHONE
ROANWELL CORPORATION**

AA The Bureau appreciates the report concerning the effectiveness of the Confidencer which you furnished in your 6-27-60, letter under the above caption. Other field offices will be advised of the advantages and availability of this type of microphone.

Since the installation of these units on a trial basis in your office, it has been determined that Bell System telephone companies have adopted the Confidencer as a standard item to be furnished subscribers on request. An installation charge is not contemplated, but there will be a continuing monthly charge of approximately \$.75 for each unit. Therefore, additional units should not be purchased directly from the Roanwell Corporation for use on telephone company instruments.

In the interest of maintaining good relations with the telephone company and the Roanwell Corporation, any of the six units now in use on telephone company instruments should be removed and the telephone company requested to install Confidencers on the same instruments. If there are no privately owned handsets, such as those on radio transmitters, on which the removed Confidencers may be used to advantage in your office, they should be forwarded to the Bureau for use in other offices.

JMM:pcc (7)



Tolson _____
Mohr _____
Parsons _____
Belmont _____
Callahan _____
DeLoach _____
Malone _____
McGuire _____
Rosen _____
Tamm _____
Trotter _____
W.C. Sullivan _____
Tele. Room _____
Ingram _____
Gandy _____

62 JUL 20 1960

MAIL ROOM ☐

TELETYPE UNIT ☐

Office Memorandum • UNITED STATES GOVERNMENT

TO : DIRECTOR, FBI
ATT: FBI LABORATORY-ELECTRONICS SECTION

DATE: 6/27/60

FROM : SAC, NEW YORK (66-1403A)

SUBJECT: CONFIDENCER MICROPHONE
ROANWELL CORPORATION

OTOLL LINE AND FIVE NAUGHTNAUGHT SERIES INSTRUMENTS

At the suggestion of Bureau Supervisor ROBERT SLAGER, this office procured and placed in service 6 Confidencer microphones manufactured by the Roanwell Corporation, 180 Varick Street, New York 14, New York. These confidencer microphones are direct replacements for Western Electric microphones used in standard telephones.

The confidencer has the property of transmitting only voice signals spoken in close proximity to and directly into the microphone. It nullifies or completely eliminates background noise and talk. The six procured by this office were placed in service in the radio dispatching room and in four other telephones where it was desired to minimize the possibility of radio traffic being overheard in the course of telephone conversations when these phones are in use.

Since placing these confidencer microphones in use their effectiveness has been closely checked. It has been found that they are completely satisfactory in use in the telephone instrument and that they are most effective in reducing background and side noise. In view of this successful application, it is felt that other offices might have use for confidencer microphones particularly in offices in which the switchboard operator also handles radio traffic. D

Orders for confidencer microphones may be placed direct with the Roanwell Corporation at the address given above. The type of telephone instrument in which the confidencer is to be used or the number of the carbon microphone, it will replace must be specified to that the proper model of confidencer for direct replacement can be supplied. The cost of these confidencer microphones is \$12.00 each.

- 3 - Bureau
(1 - FBI LABORATORY-ELECTRONICS SECTION)
1 - New York (66-1403A)

REC-27

13 JUL 18 1960

CVD:hd
(4)

80-781-8

RLM
8-11-60SEVEN
8-11-60

Letter to 7-1-60
to 8-1-60
Din. n. l.

ST
7/19/60

SAC LETTER NO. 60-36

TOLL LINE AND FIVE NAUGHT NAUGHT
SERIES INSTRUMENTS

(G) USE OF CONFIDENCERS ON TELEPHONES IN NOISY LOCATIONS -- The Bell Telephone Companies are now offering a special type of microphone for use in telephone instruments in noisy locations. This unit, known as a Confidencer, is a noise-cancelling microphone manufactured by the Roanwell Corporation, 180 Varick Street, New York 14, New York. It is designed as a direct replacement for the standard F1 or T1 mouthpiece microphones used in Bell System and Western Electric instruments. There are two models, the R-CO for the 200, 300 and 400 series telephones and the C-500 for the 500 type set.

The Confidencer serves to cancel out much of the outside or background noise normally picked up by the regular microphone. At the same time, the voice spoken directly into it is transmitted with clarity and proper volume. Sound originating at an angle to the unit is reduced considerably in volume, so the mouthpiece must be held directly in front of the user's lips and not off to one side or down on the chin. The Confidencer may be used to advantage where background noise interferes with the intelligibility of conversation or where it is undesirable that any background conversation be overheard by an outside party. This may occur at locations such as reception desks, Number Three Register desks and radio dispatching rooms.

You are authorized to use Confidencers at those locations where their features will serve a definite purpose. They are not to be installed on an indiscriminate basis due to the extra expense involved. The local Bell System company will supply Confidencers for instruments serviced by them. Usually, there is no service (installation) charge, but there will be a continuing monthly charge of approximately 75 cents for each unit. For privately owned Western Electric type handsets, such as those used on radio transmitters, the Confidencer may be purchased from the local distributor of Roanwell products at \$12 each. If unavailable locally, the units may be ordered through the Bureau.

ALL INFORMATION CONTAINED

HEREIN IS UNCLASSIFIED

DATE 8/1/83 BY SP8 BTJ/BCE

80-781-

NOT RECORDED

JUL 21 1960

59 AUG 2 1960

66-04-2959

ORIGINAL FILED IN

SAC, San Francisco (66-440)

August 9, 1960

REC-27

Director, FBI

80-781-9

✓ *Allyman* 5524

CONFIDENCER MICROPHONES

Reurlet 8/2/60, requesting that the Bureau furnish three R-CO Confidencer microphones for use in critical locations in your office.

Referenced letter does not indicate whether you intend to use these units on Western Electric type handsets for Bureau communication purposes in your office, or in Bell System telephones. If the former is the case, the Bureau will obtain and forward them to your office. However, if you intend to install them in Bell System instruments because they cannot be obtained from the local telephone company, you should suggest to the local company that these units are obtainable from the Roanwell Corporation, 180 Varick St., New York 14, N.Y. The Bureau does not wish to place itself in the position of installing "foreign" equipment on official telephone company lines if the company can supply the same service.

7:20 PM
JMM:cay (8)
Allyman

Allyman



59 AUG 18 1960

Tolson _____
Mohr _____
Parsons _____
Belmont _____
Callahan _____
DeLoach _____
Malone _____
McGuire _____
Rosen _____
Tamm _____
Trotter _____
W.C. Sullivan _____
Tele. Room _____
Ingram _____
Gandy _____

MAIL ROOM ☒ TELETYPE UNIT ☐

Office Memorandum • UNITED STATES GOVERNMENT

TO : DIRECTOR, FBI

DATE: August 2, 1960

FROM : SAC, SAN FRANCISCO (66-440)

SUBJECT: CONFIDENCER MICROPHONES

ATTENTION: ADMINISTRATIVE DIVISION

3
10
TOLL LINE AND FIVE NAUGHT NAUGHT SERIES INSTRUMENTS

Reference is made to SAC Letter 60-36, pointing out the security advantages in the use of confidencer microphones in critical locations.

An attempt to secure these microphones locally has disclosed that they are not distributed in this area.

It is requested that the Bureau furnish to the San Francisco Office three Model R-CO confidencer microphones for use in critical locations.

2-Bureau
1-San Francisco
WHW:hml
(3)

REC-27

MCT-51

80-781-9

12 AUG 12 1960

EX-112

7
mm

Letter 60-36
8-11-1960

Office Memorandum • UNITED STATES GOVERNMENT

TO : Director, FBI

DATE: 8/15/60

FROM : Legat, Mexico (66-5)

SUBJECT: USE OF CONFIDENCERS ON TELEPHONES
IN NOISY LOCATIONS

Re SAC Letter #60-36 dated 7/19/60.

On 8/10/60 [redacted] Sales Representative of the Ericsson, S. A. (company), located at Maestro Antonio Caso #205, P. O. Box 9958, Mexico, D. F., advised that the Ericsson Company does not have in Mexico any special type of microphone for use in their telephone instruments in noisy locations.

b6
b7c

Mr. [redacted] advised that the microphone used in the Ericsson handset presently in use with the switchboard at the Legat's Office, Mexico, D. F., is an Ericsson carbon microphone, type #A10. The latter, according to Mr. [redacted] means a 100 OHMS resistance with regard to the carbon microphone. This microphone measures 2" in diameter and 3/4" in depth.

Referenced SAC letter advised that there are two models of confidencers, the R-CO for the 200, 300 and 400 series telephones, and the C-500 for the 500 type set used in Bell systems and Western Electric instruments.

The Bureau is requested to advise if the known confidencers mentioned in referenced SAC letter may be used in the above-described Ericsson handset, and if so, it is suggested that the model adequate for use in the Ericsson handset used with the switchboard at the Mexico City Office be forwarded Legat, Mexico.

It is noted that if the above request cannot be fulfilled without further knowledge of the specifications of the Ericsson carbon microphone A10, possibly an extra microphone of the same type may be forwarded to the Bureau for examination, upon the Bureau's specific request.

2 - Bureau
1 - Mexico City
FER/bje
(3)

57 SEP 8 1960

REC-89
EX 109

80-781-10

SEVEN

COPIES
FILED
36

Confidencer Microphones

SAC, Kansas City (66-470)

September 8, 1960

Director, FBI (80-781) - //

REC-56

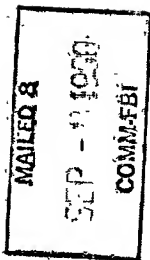
TELE-MATE
EXEC-U-FONE
TECHNICAL EQUIPMENT

Reurlet 8/31/60, captioned as above reporting [redacted] offer to make available one of the captioned units for examination in the FBI Laboratory. An examination of the photographs submitted with referenced letter does not indicate that there is anything new or novel about the device, therefore no purpose would be served by sending a unit to the Laboratory. b6 b7C

Your interest as well as that of Mr. [redacted] in bringing this to the Bureau's attention is appreciated. You should be certain that the contacts with [redacted] are not interpreted by him as an interest in nor an endorsement of his product.

CKC:cay (5)

DEM



Tolson _____
Mohr _____
Parsons _____
Belmont _____
Callahan _____
DeLoach _____
Malone _____
McGuire _____
Rosen _____
Tamm _____
Trotter _____
W.C. Sullivan _____
Tele. Room _____
Ingram _____
Gandy _____

51 SEP 12 1960 MAIL ROOM

TELETYPE UNIT

Office Memorandum • UNITED STATES GOVERNMENT

TO : DIRECTOR, FBI
ATTENTION FBI LABORATORY

DATE: 8/31/60

FROM : SAC, KANSAS CITY (66-470)

SUBJECT: ~~TELE-MATE~~
~~EXEC-U-FONE~~
Technical Equipment

CONFIDENTIAL MICROPHONES

[redacted] Prairie Village, Kansas, Kansas Representative for Ship and Shore blouses, advised that he was interested in the distribution of the Tele-Mate Exec-U-Fone which he exhibited and made available to SA [redacted] of this office. He indicated that the device was distributed from Los Angeles and is of definite value to facilitate the handling of telephone conversations.

Photographs of this device are enclosed showing how it is used with a conventional telephone to amplify the voice received over the telephone so that a person or persons can hear the voice without having the telephone to his ear. The person receiving the call can also talk through the device so that he does not have to have the mouth piece of the telephone near his mouth to be heard.

b6
b7c

[redacted] pointed out that this device is of definite aid in business affiliations where a person needs not only to have both hands free in taking an order, but to be able to move around in the room such as a druggist taking calls while he is going about his work filling a prescription.

[redacted] also pointed out that it is of definite value when more than one person wants to be a party to a telephone conversation.

3 Bureau
(3 Encls.)
2 Kansas City (66-470)
(1 file 66-3104)
RVH:djn
(5)

ENCLOSURE

1cc + Enclosure retained in the Laboratory 9/9/60

REC-56

80-781-11

10 SEP 9 1960

EX-107

RECEIVED

[] stated that the regular price per unit for this device is \$34.95. Purchased in quantity, the units are priced as follows:

Over 48 units	\$24.50 each
Over 24 units	\$26.50 each
Over 12 units	\$29.95 each

These prices are FOB, Kansas City. He can provide a choice of the colors black, ivory, and beige.

This device was shown to [] of the Kansas City Police Department and he stated that he had not seen the unit before, although he understood that the telephone company had a similar unit for distribution.

[] has previously indicated that the telephone company would have a similar product but explained that the charge for it was about \$75, twice the amount of the Tele-Mate phone.

This information is forwarded to the FBI Laboratory so that they will be cognizant of this type of product being distributed on a commercial basis.

b6
b7c

It is suggested that a telephone call received on an investigative matter during a conference of agents on the case could be heard by all agents at the conference instead of having to be relayed by the person actually talking on the telephone. This would save agent time and would also make it possible for agents at the conference to make suggestions during the telephone conversation that would probably prevent a possible subsequent telephone call.

It is suggested that the FBI Laboratory may desire to consider use of this device in the Laboratory or in a Bureau Office to determine if it could be used to advantage when more than one person desires to take part in a telephone conversation.

Mr. [] advised that he would make available one of these units for examination by the FBI Laboratory if desired.

UNITED STATES GOVERNMENT

Memorandum

TO : DIRECTOR, FBI

DATE: September 13, 1960

FROM : SAC, SAN FRANCISCO (66-2746)

SUBJECT: TELEPHONE FACILITIES
SAN FRANCISCO DIVISION

ATTN: Administrative Division

Confidencer Microphones

Re SAC Letter 60-36, Section G, July 19, 1960,
Bulet August 9, 1960, and San Francisco letter August 2, 1960.

As suggested in referenced Bulet, the San Francisco Office contacted the Pacific Telephone and Telegraph Company concerning the availability of Confidencer Microphones for use on Western Electric equipment in the following locations at Headquarters: the Information Desk, the Night Answering Position, and the Duplication Unit. After a review of referenced SAC Letter, it was felt that these three telephone instruments were definitely in locations where the Confidencer Microphone would be of great value in eliminating extraneous conversations and other noise during use.

The Telephone Company advised that they are presently in the process of securing approval by the California Public Utilities Commission (PUC) of proposed rates for these microphones which are referred to by the company simply as "Confidencers." The proposed rates are \$1.30 per month for each Confidencer and \$12.00 per Confidencer for installation. It is not anticipated that the PUC decision will be rendered for at least 60 days and, therefore, the company cannot take orders for the Confidencer until after October 1, 1960.

UACB by that date, this office will order the three Confidencers for the three instruments cited above at a total installation cost of \$36.00 and a total monthly charge of \$3.90, subject to approval of those rates by the PUC.

CCs:

- (2) - Bureau (Attn: Administrative Division)
- 1 - Bureau (Attn: FBI Laboratory)
- 1 - San Francisco (66-2746)

CLEB:pp

(4)

NOT RECORDED

12 SEP 23 1960

53 SEP 26 1960

Voted 1-20-60
gmm

THREE

SEVEN
gmm

Mr. Tamm

September 16, 1960

R. L. Millen

[Redacted]

aka

b6
b7C

ITSP; FRAUD BY WIRE

O'Donoghue, M. J.

ReBulet 9/12/60, to Miami captioned as above. It has been ascertained that the device reported by Miami to be used to by-pass the timing equipment in CAMA (Customer Assist Machine Accounting) and AMA (Automatic Machine Accounting) associated with DDD (Direct Distance Dialing) will work under certain conditions, however the talking time will be limited from two seconds to a maximum of two minutes. The success of this equipment will depend upon the following factors:

- (1) The shorting out of the ringing equipment long enough to have the ringing relay in the central office drop out of the circuit and yet short enough to prevent the one to four-second off-the-hook mode condition to be reflected back to the timer in the CAMA or AMA equipment. The Western Electric 313C cold cathode tube provides the momentary off-the-hook mode.
- (2) The length of time it requires the Central Office "time out" equipment to cut the "called" station off the line. In the Bell System exchanges this time out equipment will vary from a few seconds in the newer switching equipment to two minutes in Step-by-Step Central Office equipment.
- (3) The length of time it requires the sender at the Central Office controlling the second instrument at the called station to "time out" and put a permanent (trouble) signal on the second telephone line. The dialing of the single set of pulses to clear the dial tone on the second instrument at the called station can be repeated many times; however there is no advantage in repeating this operation beyond the "time out" of the called number.

- 1 - Mr. Rosen (Attention: Mr. Curran, Room 7204)
- 1 - 66-8160 (Technical Surveillance Equipment)
- 1 - 80-789 (Tracing Telephone Calls)
- 1 - 80-781 (General Telephone Technical Data)

80-781-
NOT RECORDED
46 SEP 19 1960

CKC:cay (14)
52 SEP 19 1960

Memorandum to Mr. Tamm from R. L. Millen

Re: **aka**
ITSP; FRAUD BY WIRE

b6
b7C

It was pointed out in Bulet to Miami that special wiring must exist to permit the operation as set out in their letter dated 8/10/60. The "time out" features on the telephones connected to the special device may be adjusted or even paralyzed so that extended conversations may be conducted. The condition may be caused by a malfunction of the central office switching equipment or it may have been created by a confederate working within the telephone company at the terminating central office. The operating telephone companies make every effort to prevent malfunctions of this type through regular routine cleaning and adjusting switching equipment as well as through the use of automatic testing equipment designed to ferret out defects and malfunctions of the switching equipment. They constantly remind personnel of their obligation to insure subscribers of proper and secure communication facilities. When they find an employee not meeting these standards the employee is dismissed immediately.

ACTION: None. For information.



NORTH ELECTRIC COMPANY

Gallon Ohio
Telephone HOWard 8-2420
Cable NORTHPHONE

Electronetics Division
May 3, 1961

Federal Bureau of Investigation
9th and Pennsylvania Avenue, S. W.
Washington, D. C.

Attention: Mr. John Matter
Room 7318

Confidence Microphone

Dear Mr. Matter:

At the request of our Admiral Fritz Gleim, we are forwarding under separate cover our Industrial Catalog, Components Handbook, miscellaneous brochures and specific telephone information with prices. The electronic switching information is a new state of the art and we believe will be of considerable interest to you.

If you should have any questions regarding the above, please do not hesitate to contact Admiral Gleim or the undersigned.

Very truly yours,

NORTH ELECTRIC COMPANY



Manager-Component Products

Ohio

Retained
in Electron
ics Section

5-5-61
8mm

A

b6
b7C

RPP/ef

Ohio

80-781-12

Copy to: Admiral Fritz Gleim (Ret.)
940 - 25th Street, N. W.
Apt. 502
Washington, D. C.
Federal 7-5670

REC-88

MAY 11 1961

EX. - 102

80-781

176

55 MAY 15 1961

7318
8mm

80-781

September 11, 1963

gm

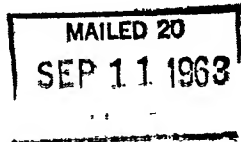
Todd Electric Company, Incorporated
Department TE & M
20 Harrison Avenue
Yonkers, New York
 Gentlemen:

The Federal Bureau of Investigation is interested in obtaining available technical information and specifications pertaining to **Todd hybrid transformers for use in telephone communication circuits.**

Confidential Microphone

Since this material might have possible uses in connection with official investigations, it would be appreciated if you would afford confidential treatment to this inquiry. Please direct your reply for the attention of the Federal Bureau of Investigation Laboratory.

Very truly yours,



J. Edgar Hoover
 John Edgar Hoover
 Director

80-781
 NOT RECORDED
 SEP 12 1963

WEH:cf (4)

NOTE: Bureau indices contain no references to Todd Electric Company.

MAIL ROOM ☐ TELETYPE UNIT ☐

Tolson _____
 Belmont _____
 Mohr _____
 Casper _____
 Callahan _____
 Conrad _____
 DeLoach _____
 Evans _____
 Gale _____
 Rosen _____
 Sullivan _____
 Tavel _____
 Trotter _____
 Tele. Room _____
 Holmes _____
 Gandy _____

266
 57 SEP 13 1963
File in [unclear]

Date of Mail 7-10-63

Has been removed and placed in the Special File Room of Records Branch.

See File 66-2554-7530 for authority.

Subject JUNE MAIL *Confidential Microphone*

Removed By 65 JUL 25 1963

File Number 80-781-13

438
Permanent Serial Charge Out

80-781

December 14, 1962

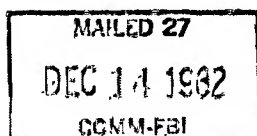
K *0* *744 Line 4 500 series Transistorized*
Altec Lansing Corporation
Anaheim, California

Gentlemen:

The Federal Bureau of Investigation is interested in obtaining available technical information and specifications pertaining to **your transistorized Altec repeaters and/or compressor amplifiers described in the December 1, 1962, issue of Telephony. In addition, it will be appreciated if you will forward a copy of your latest Altec telephone products catalogue and price list.**

Since this material might have possible uses in connection with official investigations, it would be appreciated if you would afford confidential treatment to this inquiry. Please direct your reply for the attention of the Federal Bureau of Investigation Laboratory.

Very truly yours,



John Edgar Hoover
John Edgar Hoover
Director

NOTE: Bureau indices negative re security information on Altec Lansing Corporation.

CKC:cf (6)

80-781
NOT RECORDED
4 DEC 17 1962

Tolson _____
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Callahan _____
Conrad _____
DeLoach _____
Evans _____
Gale _____
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Sullivan _____
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Trotter _____
Tele. Room _____
Holmes _____
Gandy _____

DEC 18 1962
MAIL ROOM ☐ TELETYPE UNIT ☐

UNITED STATES GOVERNMENT

Memorandum

TO : DIRECTOR, FBI
(ATTN: FBI LABORATORY)

DATE: 9/12/63

FROM : SAC, SAN FRANCISCO (162-8)

SUBJECT: CALL DIVERTER
Marcom Corporation,
Oakland, California
INFORMATION CONCERNING
(Technical Equipment)*Conf. Sender Microphone*

Enclosed herewith are two (2) copies of a brochure published by Marcom Corporation, 302 Oakland Avenue, Oakland, California, describing a newly developed Call Diverter, designed to relay telephone calls from one telephone to another.

This material was received from the Intelligence Division, San Francisco Police Department on 9/6/63.

The equipment is of interest since it is readily adaptable by bookmakers for diverting telephone calls, and could be utilized in the same manner as the so-called "cheese-box" now being used by bookmakers in this area. As yet, the San Francisco Police Department has had no instances of the Call Diverter being so used, and the manufacturer had agreed to keep accurate records of purchasers of this equipment for the San Francisco PD.

This is being submitted for the information of the Bureau.

- ② - Bureau (Enc.)
1 - San Francisco

DET:NNH
(3)

ENCLOSURE
ENCLOSURE ATTACHED

1cc-retained in Electronics Section

no reply necessary

The Laboratory is aware of this equipment. We are following the progress of the distribution once 9/14/63

REC-13

80-781-14

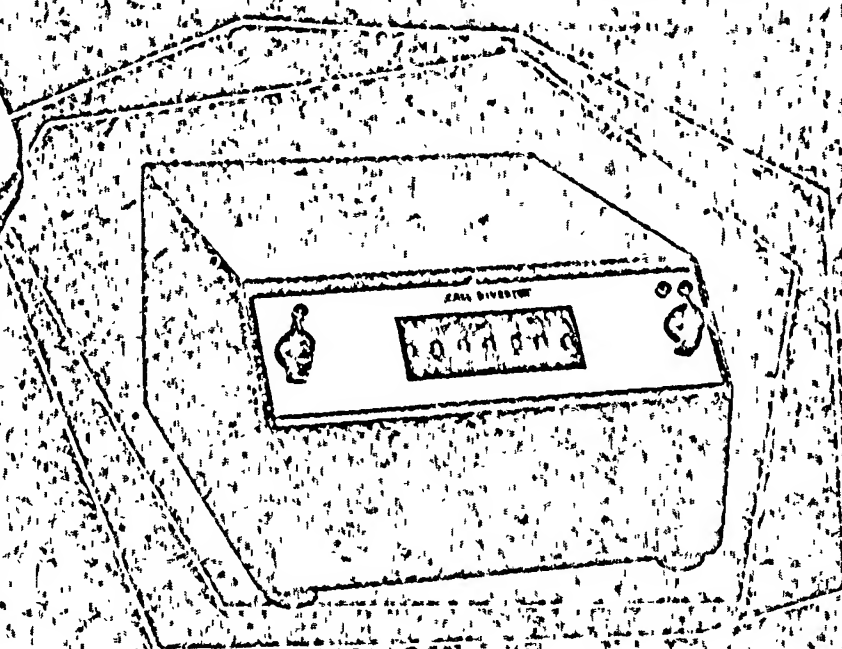
NOT RECORDED
10 SEP 18 1963

SEVEN

59 NOV 26 1963

This man takes his phone calls
along wherever he goes

using the **CALL DIVERTER**
by **MARCOM**



Attention! Here's a new way to handle your calls.

PERSONAL CONTACT (MINUTE). He promotes good will, saves sales orders that might otherwise be lost, keeps dealers and salesmen in continuous contact, consummates urgent conferences, promotes the exchange of ideas between field and office, eliminates third party handling of calls, and is instantly available for vital matters.

FREEDOM OF MOVEMENT. is enjoyed without losing important calls or endangering them through inadequate answering services, recording devices or secretarial handling.

THE PERSONAL CHANCE OF IDEAS IN TWO-WAY COMMUNICATION. is promoted, instead of merely recording a monologue. A recorded or memo message often fails to meet the need for immediate answer or discussion.

ALARM can also be activated by the call diverter. For example, arousing a plant manager in his home or on a trip. Several alarms can be accommodated, each identifying its nature and location.

REMOTE CONTROL is also available to start or stop machinery, connect or disconnect electrical circuits, etc. This can be done locally or by long distance, from any telephone.

MARCOM CORPORATION

CALL DIVERTER - MARCOM METHODS AND OTHER ANSWERING DEVICES

The most important calls are those demanding immediate personal contact. The unique transfer feature of the Call Diverter makes it the only instrument on the market to provide that kind of service.

Will it work with various types of central office equipment and line facilities? Yes. Only in exceptional cases is any adjustment necessary, and then only of the simplest kind.

The call diverter is similar to what other answering devices? None. It's a new departure. Actually it is a transfer unit which sends calls on to any number the subscriber chooses, whether through intra- or inter-exchange systems.

Are there other ways it can help, besides passing the subscriber's calls on to him? Yes. If the subscriber wishes, it will pass his calls on to an associate during the subscriber's absence. The associate hears a transmitted tone on the call to tag it as a transferred call.

Is more than one telephone line necessary for the use of a diverter? Yes. But, when the diverter is turned off, both lines revert to normal service. With the diverter on, an incoming call on either line activates the device.

What does it cost? In comparison, it costs a little less than an answering recording device.

What about incoming toll or long distance calls? The call diverter prevents termination of an incoming toll or long distance call until the diverted number has answered.

What if the subscriber does not want to transfer all calls? Circuit options in the diverter furnish a means of screening calls. For this, however, one of the two connected lines must be unlisted.

Does the caller know that the subscriber is not in his office? No. When the phone is answered, the person answering hears a different tone before the connection. This identifies the call to him as a transferred call; however, the caller hears only ringback until the connection has been established.

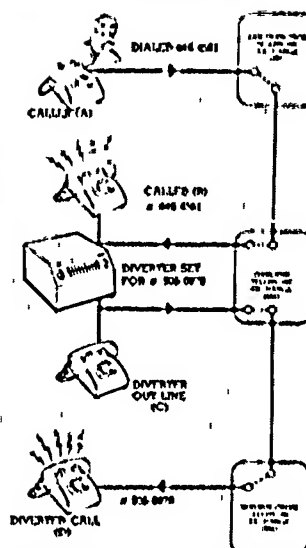
What if an alarm is triggered while a call is in progress? The alarm code is superimposed upon the connected call.

What about different dialing systems? The diverter may be ordered for seven, ten or twelve digit dialing.

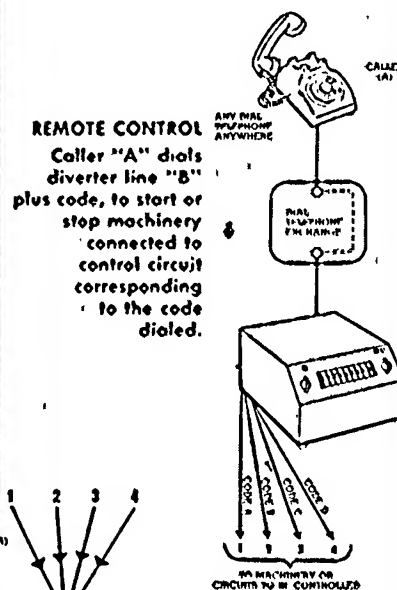
How does the call diverter work? It sees an incoming call, dials a number, connects and disconnects, and is supervised as is an ordinary telephone call. It is not subject to timing limitations.

Size? Colors? Dialing? Measures 9" x 12" x 5 1/4". Gray color is standard, telephone colors optional. 7, 10 and 12 digit dialing.

A CALL TRANSFER



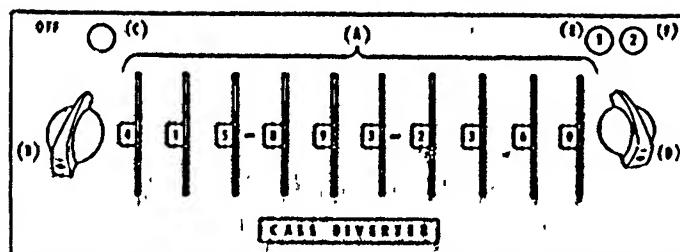
Caller "A" dials Oakland telephone "B", 446-4561. Diverter is ON and is set for Walnut Creek "D" 935-0878. Diverter dials out on line "C". Diverter terminates call only upon answer of Walnut Creek.



REMOTE CONTROL

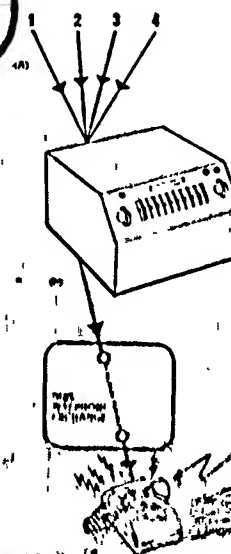
Caller "A" dials diverter line "B" plus code, to start or stop machinery connected to control circuit corresponding to the code dialed.

VERY SIMPLE TO OPERATE



Set THUMB WHEELS "A" to desired number and operate "OFF-ON" switch to "ON" position. PILOT LAMP "C" will light. The diverter is then ready to transfer calls and alarms at positive command to direct remote control circuits — ready to guard office, factory or home.

Should the subscriber return and find a call in progress he may intercede by operating the INTERCEPT switch "D" toward lighted lamp "E" or "F". He may then talk to calling party. Returning the "OFF-ON" switch to "OFF" will then leave him connected through the intercept switch to the calling party only. The intercept control and lamps are optional.



ALARM SERVICE

Triggered alarm "A" supplies ground to diverter alarm CKT. Diverter dials pre-selected number over line "B" and transmits audible coded tone to subscriber "C".

CALL DIVERTER

THE TELEPHONE WATCHDOG

The CALL DIVERTER with its options and two telephone service lines will extend service of your telephone subscription to include:

- AUTOMATIC CALL TRANSFER TO ANY NUMBER YOU CHOOSE.
- TRANSMITTING OF ALARMS TO ANY NUMBER YOU CHOOSE.
- CONTROL OF ELECTRICAL CIRCUITS AND MACHINERY FROM ANY TELEPHONE ANYWHERE.

When the CALL DIVERTER is turned off the two connected lines provide normal telephone service. With the DIVERTER on, an incoming call on either line will activate the device and the number you have set on its number selection switches will automatically be dialed and connected when the selected number answers.

- SCREENING OF CALLS TO BE TRANSFERRED.

Circuit options in the CALL DIVERTER provide a means of screening calls to be transferred when one of the 2 connected telephone lines is non-listed. The calls transferred are then limited to your choosing.

- NO RECORDING - CALL DIVERTER IS A DIRECT CONVERSATION SYSTEM.

Present answering devices using recording equipment result in delays and call backs. In addition, a toll caller reaching a number using such recording devices will be billed for the connection even though no purpose has been served whatever. Very often important business will not wait for a call back, and a recorded message will not meet an immediate need.

- ELIMINATING THIRD PARTY HANDLING OF YOUR CALLS.

Presetting a number where you can be reached results in personal handling of your business. The CALL DIVERTER gives the caller no indication that you were reached at a number other than the number he dialed.

- IDENTIFICATION OF A TRANSFERRED CALL AT THE TELEPHONE NUMBER YOU HAVE SELECTED TO RECEIVE TRANSFERRED CALLS.

When the telephone number dialed by the DIVERTER is answered, a short tone precedes the connection of the calling party to identify the call as one transferred rather than a call placed direct to the phone used to accommodate the transferred calls. This feature provides notice to the party whose number is being used to accommodate the transferred calls that the call is for the DIVERTER subscriber who requested permission to make transfer of his calls to that number.

- REDIAL WHEN PRESELECTED NUMBER RECEIVING ALARMS IS BUSY.

The Telephone Watchdog
Page 2

If the number dialed by the CALL DIVERter is busy, the DIVERter will continue to release and redial the number until the busy condition no longer exists - or until the alarm is answered or reset.

Here is a machine for the doctor or attorney who is away and wishes to direct his client to an associate. It eliminates the necessity of notifying each client of his absence and transmits a tone so that the acting associate may answer calls accordingly.

For the man on 24 hour call, the CALL DIVERter means more freedom of movement without notification to some central point of his every move.

The CALL DIVERter's transfer service will find thousands of applications.

- DELIVERY DATE TO THE TELEPHONE COMPANY - 90 to 120 DAYS FROM DATE OF ORDER.

(Less Alarms and Controls)

The CALL DIVERter characterizes a selective and almost infinite extension to your present telephone service - but this is only one of its truly amazing functions. The CALL DIVERter will accommodate from 1 to several alarms. With a single conductor connected to receive ground from each alarm when triggered, the CALL DIVERter will dial you at the preselected number and connect a coded tone, identifying the nature of the alarm or alarms and their location.

If an alarm, or alarms are triggered while a call is in progress through the transfer circuits, the alarm tone code will be superimposed on the connected call.

Only one line is needed to dial the selected number and transmit identification when an alarm activates the DIVERter, the second line is connected for standard telephone service during the alarm period.

If the number dialed by the CALL DIVERter is busy - it will continue to redial until the busy no longer exists and until an answer has been received. After answer the dialing is discontinued but the tone remains on the DIVERter lines until the alarm has been reset. The DIVERter will continue its function of call transferring with no interference from the low level audio alarm. One of the numbers connected to the CALL DIVERter may be dialed at any time to ascertain if an alarm has been reset.

MARCOM CORPORATION
302 Oakland Avenue
Oakland 11, California
Telephone: 893-2360
Area Code: 415

SAC, New York 11
REC-11

January 6, 1964

Director, FBI (80-781)-15

1 - Mr. Belmont

isa
NEW YORK TELEPHONE COMPANY
DEDICATED OUTSIDE PLANT

Reurlet 12/26/63 requesting Laboratory representatives to attend a conference with New York Telephone Company sources regarding the dedicated plant plan.

Laboratory Supervisors C. K. Corbett and [redacted] [redacted] will be available to attend this conference and plan to arrive at the New York Office on the morning of 1/10/64.

b6
b7c

WEH:bwd

(9)

NOTE: Cover memo R. L. Millen to Mr. Conrad dated 1/6/64 re same subject, WEH:bwd.

Harvard
Cancelled
1/10/64
REC'D-READING ROOM
FBI
JAN 6 5 33 PM '64

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MAILED 27
JAN - 7 1964
COMM-FBI

FBI-NEW YORK
REC'D BELMONT

MAIL ROOM ☐ TELETYPE UNIT ☐

UNITED STATES GOVERNMENT

Memorandum

TO : DIRECTOR, FBI
ATT: FBI LABORATORY, RADIO ELECTRONICS SECTION)

FROM : SAC, NEW YORK

SUBJECT: NEW YORK TELEPHONE COMPANY -
DEDICATED OUTSIDE PLANT

DATE:

12/26/63

The American Telephone and Telegraph Company, operators of the New York Bell System, have placed into operation in certain areas covered by the New York Office the dedicated plant plan. The adoption of the dedicated plant plan and the use of this technique throughout the Bell System will have a far-reaching impact upon technical procedures presently utilized in the sound work of the New York Office.

In order to better understand the system, its purposes and design, a meeting with highly placed sources within the New York Telephone Company has been set with senior sound personnel of the New York Office for 1/10/64. This meeting was initiated by our sources within the telephone company to help the FBI in maintaining standards of sound work in both technical and security aspects as have been previously established.

These people are most cooperative and anxious in their efforts to help us in every aspect. It is felt, by the New York Office, that the dedicated outside plant system will affect sound work throughout the Bureau and that the meeting is important enough to warrant representation by the Bureau Laboratory.

Supervisor CHARLES CORBETT has previously been introduced to these high officials of the New York Telephone System and is most conversant with the New York Office sound operation. If Supervisor CORBETT is available to attend the January 10th meeting, the New York Office would be most appreciative.

REG-1180-781-15

In order to make the time and place of meeting more definite, the New York Office would appreciate confirmation of Supervisor CORBETT or any others arrival, New York, to attend above.

3-Bureau
(1-FBI Lab, Radio Electronics Section)
1-New York

RES:Dad
(4)

DEC 30 1963

SEVEN

DO NOT WRITE

1cc Sub
memo
RCM
WEH/1/6/64

at NY WEH/1/6/64

10 Confidencer Microphone

EXP. PROC.
32 DEC 28 1963
36

UNITED STATES GOVERNMENT

Memorandum

Tolson	_____
Belmont	_____
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Holmes	_____
Gandy	_____

TO : Mr. Conrad *JK*

DATE: January 6, 1964

FROM : R. L. Miller *RLM*SUBJECT: NEW YORK TELEPHONE COMPANY
DEDICATED OUTSIDE PLANT*Confidencer Microphone*

Re New York letter 12/26/63 requesting Laboratory representatives to sit in on a conference between highly placed sources within the New York Telephone Company and senior sound personnel of the New York Office to discuss the "dedicated plant plan" being instituted in some areas by this company.

The "dedicated plant plan" referred to is a plan of initially installing cable, wiring and other outside plant facilities committed to a definite use of service and without the flexibility characteristic of telephone company practices in the past.

As a part of the Laboratory's supervisory responsibilities in keeping abreast of developments in this field and because of the impact this development could have on our technical efforts, it is felt that the Laboratory should send two representatives to attend this conference in New York on 1/10/64.

RECOMMENDATION:

That Bureau approve having Laboratory Supervisors C. K. Corbett and , attend the conference with telephone company sources in New York City on 1/10/64. If approved, a letter, attached, advising New York of this should be sent.

b6
b7CEnc. *read 1-7-64*WEH:bwd *1-7-64*

(8)

80-781 *memo to Conrad 1/11/64*

EX-104

REC-11

80-781-16
FEB 12 1964

1 - Mr. Belmont

64 FEB 17 1964

UNITED STATES GOVERNMENT

Memorandum

TO : Mr. Conrad

DATE: January 14, 1964

FROM : R. L. Miller

SUBJECT: NEW YORK TELEPHONE COMPANY
DEDICATED OUTSIDE PLANT

Confidencer Microphone

Sources in the New York Telephone Company arranged to discuss a new telephone company cable distribution system and procedure known as the "dedicated cable plant plan" with representatives of this Bureau. On January 7, 1964, the Director approved a Laboratory representative's attendance at this conference. On January 10, 1964, Messrs. [redacted], Chief Staff Engineer; [redacted] Assistant Staff Engineer; [redacted] Plant Engineer; and [redacted] Operations and Research Engineer, New York Telephone Company, discussed the new cable distribution plan with Supervisor C. K. Corbett of the Laboratory and New York Sound-Trained Agents [redacted].

[redacted] John G. Fleming, [redacted] and Charles Van Derveer in the offices of the New York Telephone Company, New York City. Assistant Agent in Charge Winterrowd attended the preliminary nontechnical phases of this conference. Information discussed usually requires three weeks for the telephone company staff engineers to assimilate. The technical information gained will be most valuable in future handling of technical surveillances. A manual on this procedure is being retained in the Laboratory and pertinent information will be incorporated in our sound training and retraining programs.

This conference was extremely valuable in assisting the Laboratory in its supervisory responsibilities in keeping abreast of developments in this field. Section personnel have been furnished technical details of the conference.

ACTION:

Technical data obtained will be used in sound training and retraining programs. A summary of the technical details is attached for record purposes.

RLM/CKC:bwd

(9)

1. - Mr. Belmont

Enc.

ENCLOSURE

64 FEB 17 1964

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REC-11

FEB 12 1964

**TECHNICAL DETAILS
NEW YORK TELEPHONE COMPANY
DEDICATED OUTSIDE PLANT**

The dedicated outside plant plan, at this time, is an alternative method of designing and administering the customer's portion of the Bell System outside plant network. The objective of the design of an exchange cable network is to provide facilities to meet demand, with a minimum of capital investment and future rearrangement and change cost. The plan recommends the permanent assignment (dedication) of a cable pair from the central office main frame to a residential or non-key business (single line business telephone service) as demands develop, regardless of the class of service. Once dedicated, the pair will remain permanently assigned to the location whether working or idle.

While this plan has been captioned New York Telephone Company Dedicated Outside Plant, it will be adopted by the entire Bell system. There are some of the operating companies presently using this system and it is understood that all of the companies will follow the practice as soon as it can be inaugurated in their respective companies.

The dedicated outside plant program will not change any of the existing "spare pair concept" of the cable plants now in service except where cable changes are being made to relieve overloaded cable facilities.

The direct result of the adoption of this plan will be the virtual elimination of line and station transfers, essentially all cable pair transfers, and central office, drop wire or terminal jumper transfers associated with such activities. Service order assignments will be simplified. Man-made troubles and service order completion intervals will be reduced. Loop transmission will be improved.

This plan provides for a new concept in station disconnections when service is discontinued. All disconnections will be made at the main frame in the central office and the instrument left in the premises for a predetermined time even though the residence or apartment is vacant.

80-781-17

ENCLOSURE

**TECHNICAL DETAILS
NEW YORK TELEPHONE COMPANY
DEDICATED OUTSIDE PLANT**

When new service is ordered for this address (new subscriber using same existing instrument), the only installation work required will be in the central office. The company is considering mailing the "number card" to the subscriber along with instructions for placing this card on the instrument.

This new concept for cable distribution calls for the gradual substitution of control points for the existing cross-connecting boxes. Access points will be substituted for the conventional terminal boxes. Pair assignments at these two points will be made only under an engineering work order and will, therefore, not be frequented by the installer and/or repairman craft. In the areas where aerial cable (cable suspended on poles) is installed, the company intends to continue using the "ready access" type terminal, in which case the drop wire will be connected to the cable pair through binding posts. The control and access points will be installed on the walls of buildings, in basements, on poles or on cable strands.

The "dedicated cable pair" will be a non-multiplying pair of wires; however, these wires are available at the access and control points. In addition to the "dedicated pairs" each cable will have a number of unassigned pairs (spare) to handle second line requirements. Unlike the dedicated pairs, these pairs will appear in a number of different locations and are available for assignment at any location at which they appear. When a spare pair is assigned, the subscriber is "bridged" on to the spare pair without effecting changes to the reappearances of the spare pair of wires.

With this new distribution system, the company will abandon the horizontal floor distribution plan in apartment developments and institute a vertical riser distribution system. With this new system, the company will install a cable from the basement to the top floor which cable will loop through each apartment in the riser at a convenient location in the apartment. One pair of wires from this cable will terminate in each apartment with the assigned wires in the cable being cut beyond this point. There will be unassigned pairs (spares) appearing in each riser which pairs are available for assignment in each apartment in which the cable appears.

**TECHNICAL DETAILS
NEW YORK TELEPHONE COMPANY
DEDICATED OUTSIDE PLANT**

All of the Bell system telephone companies are initiating a program of pre-wiring "all new apartment construction" with a twelve-pair cable that loops through every room in each apartment. This cable will be placed before the concrete floor is poured and will be imbedded in the floor without conduit protection. The cable will appear in a convenience outlet along with a duplex power outlet in each room of the apartment. This cable will originate, pass through all rooms in the apartment and terminate at the same point in the apartment as the riser cable appears. This arrangement will permit installation of a telephone in any room in the apartment with a minimum of installation time and equipment.

When an installer receives an order to connect a new telephone set to the "multiple-type cable plant," he is told to connect his wires to certain binding posts. His order may require him to visit as many as twelve different locations before he can complete the order. Under the new system, he will visit one location where he will connect the telephone equipment to a particular pair of wires identified only by color. He will make his connections to these wires by means of insulated press fit type of connectors known as "B" connector. From this point on, the cable pair becomes dedicated to that address. If additional service is required, the installer is assigned wires with a different color. This second pair of wires is not dedicated to this address and may be used at another address after service is discontinued at the first used address.

When a new program, such as this, is inaugurated, the question that always arises is "how will it affect our operations." With the elimination of the multiple appearances, we will have to maintain close ties with the engineering staffs of operating companies to determine the color assignments and access points for the wires serving our subjects. Once the TESUR coverage is established, the chances of discovery are minimized with this new system as the connections will be made with sealed connectors at points visited only by cable craftsmen who have instructions to work on certain wire color combinations and should not, therefore, attempt to select communication lines at random.

**TECHNICAL DETAILS
NEW YORK TELEPHONE COMPANY
DEDICATED OUTSIDE PLANT**

Under most conditions, our connections to the subject's line will be at remote points and we should have adequate spare pairs of wires for leased line purposes. Our microphone coverage in the new apartments should be simplified as there will be spare pairs of wires in each room available for use for MISUR egress.

It should be pointed out that the dedicated outside plant plan is a long-range program applying only to new construction and certain changes in existing plant systems. According to company officials, it will be at least two decades before the full impact of this program will be realized. We will, whenever possible, take full advantage of these facilities in establishing MISUR and TESUR coverage.

The details of this program will be incorporated in our sound training and retraining programs.

UNITED STATES GOVERNMENT

Memorandum

TO : Mr. Conrad *JC*

DATE: September 21, 1964

FROM : R. L. Millen *RLM*

SUBJECT: ~~TELEPHONE~~ - TYPES

Tolson _____
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Gandy _____

Confidence
Microphone

There follows the technical details of an automatic telephone dialing system demonstrated by the Atlantic Research Corporation at the recent MIL-E-CON-8 show at the Shoreham Hotel. This technical discussion is being submitted for record purposes only.

It was observed at the recent MIL-E-CON-8 show at the Shoreham Hotel that Atlantic Research Corporation was demonstrating a device for automatically dialing telephone numbers. This device has been given Patent Number 3,125,643 and according to the manufacturer, affords the subscriber instant and accurate dialing for any number he programs into the unit. In addition to the instant and accurate dialing, the unit features a "grouped-logic" modular design which accomodates future dialing modes which tend to obsolete other devices. Parallel dialing of the same number over multisystems (SCAN, AUTOVON, WATS etc.), single control initiation for multiple number conference calling and intermixing of tone and rotary dialing within the same number are applications of this unit. The Automatic Telephone Dialing System (ATD) is a repertory dialing system which will dial a complete number by momentary operation of one button. In control centers, it can replace costly private wires by using the standard switching networks. The unit will also work with multifrequency or touch tone dialing modes. Manufacturer claims that the dialing memory is infinitely expandable, the limit being the loading limit of the number of address buttons at each remote panel. It should be pointed out that the unit requires one separate button for each number to be dialed from a single telephone instrument. It is conceivable that several hundred buttons would have to be attached to the telephone instrument in order to take care of the maximum number stored in the memory device.

REC-47 *20-721-19*
1 SEP 23 1964

- 1 - Mr. Conrad
- 1 - Mr. Millen
- 1 - Mr. Baker
- 1 - Mr. Matter - Mr. Stevens
- 1 - Mr. Miller - Mr. Fisher
- 1 - Mr. Corbett - Mr.

80-781

CKC:ev (7)

CONTINUED - OVER

69 SEP 28 1964

b6
b7c

Memo to Mr. Conrad from R. L. Millen
Re: TELEPHONE - TYPES
Bureau file 80-781

The unit employs central logic, memory, and power supply which are packaged in a standard card file enclosure for ease of routine maintenance. The designer has included fail safe interlocks to prevent the operation of any remote selector while the logic is in the process of dialing a selected number. If a selected address is being re-programed, the logic will immediately return to the idle condition upon release of the selected button. If the address requirement changes before completion of the initial address selected, a reset button is provided which will return the logic to the idle condition so that the desired address may then be immediately dialed. Normally this reset button can operate only when its particular selector panel is using the dialer. However, a priority strap may be connected in one or more selected panels which will allow the user to cease control of the ATD dialing system.

While this system offers many features desirable for systems of this type, it is not felt that it has application to the Bureau's work because of the size of the memory cabinet, the requirement for a separate line into each instrument for each number in the repertoire memory and the fact that the telephone company has a much better system in their card dialer. The telephone company's card dialer is much more flexible and requires less floor space than that of the Atlantic Research Corporation unit.

This is being submitted for record purposes only.

ACTION: None. For information.

FEDERAL BUREAU OF INVESTIGATION
WASHINGTON, D. C. 20535

DATE:

5-21-65

Re:

Technical Equipment

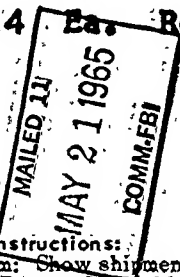
TO:

SAC, San Juan.
ATTN: SA Perritte.

Invoice of Contents

- ☐ Crypt. Trans.
- ☐ Document
- ☒ Electronics
- ☐ P & C
- ☐ LFPS

4 Ea. Resistors, 1 K ohm, 1%.



718557 B2

Special Instructions:

Mail Room: Show shipment date and registry number;
Shipping Room: Show shipment date; bill of lading number;
initial invoice; return to Section checked in block; after
initialing in block, invoice to be placed in administrative file.

FBI File No.

80-781

Reurteltype 5-21-65

6 Via Registered Air Mail, Special Delivery/
6 MAY 23 1965

1 - Mr. Newman
1 - Mr. Fisher

80-781

October 27, 1964

Special Agent in Charge , Butte (66-47)

Re: **BELL SYSTEM PRACTICES
ABC OF THE TELEPHONE**

Dear Sir:

The following concerns the technical equipment of your office:

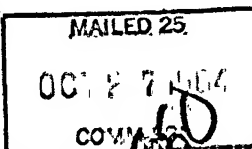
mz
pts
Reurlet 10/14/64 stating that your office has six volumes of a manual entitled "Bell System Practices" and two volumes of a publication entitled "ABC of the Telephone." Relet requested that the Bureau advise if the material is current and whether the manuals should be retained.

The publication "ABC of the Telephone" is current and should be retained by your office. The manuals entitled "Bell System Practices" contain reference material. However, if these manuals are no longer needed by your office, you are authorized to destroy same. In the event you destroy these manuals, they should be treated in the same manner as confidential trash..

Material included on your inventory will require appropriate inventory change when destroyed.

*These items
are not on
inventory
BPF*
BPF:ev (5)

Tolson _____
Belmont _____
Mohr _____
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Casper _____
Callahan _____
Conrad _____
Evans _____
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Trotter _____
Tele. Room _____
Holmes _____
Gandy _____



Very truly yours,

John Edgar Hoover
John Edgar Hoover
Director

MAIL ROOM ☒ TELETYPE UNIT ☐

UNITED STATES GOVERNMENT

Memorandum

TO : Director, FBI

DATE: 10/14/64

FROM : SAC, Butte (66-47)

SUBJECT: BELL SYSTEM PRACTICES
ABC OF THE TELEPHONE

OTOL line and Five Naught Naught Series Instruments

By SAC letter #337 captioned "Experience for Qualified Sound Men" dated 8/13/43 this office was furnished with six volumes of a manual entitled "Bell System Practices."

By No Number SAC letter #53-E dated 8/11/53 captioned "Reference Material - Technical Surveillance," this office was furnished with one copy each of Volumes 1 and 2 of a publication entitled "ABC of the Telephone."

Due to the age of these two references, the Bureau is requested to advise if the material is current and whether the manuals should be retained.

2-Bureau (Reg.)
1-Butte

RWE:iap
(3)

*I L.O. to Butte 1/24/64
DPF, sec*

80-781-
NOT RECORDED

25 OCT 19 1964

— 26 —

THREE

7/15/64

July 8, 1966

Airtel

1-Mr. Mohr
1-Mr. Conrad
1-Mr. Baker
1-Mr. Miller

TO: SAC, San Francisco

FROM: Director, FBI (80-781)

REC 14

20

TELEPHONE CALL DIVERTER UNIT
RICHARD/CROSS MARCOM CORPORATION
4244 BROADWAY
OAKLAND, CALIFORNIA

The Bureau is in receipt of the following Western Union telegram dated July 7, 1966:

"J Edgar Hoover, Director of Federal Bureau of Investigation, Department of Justice, Washington, D. C. Respectfully invite representatives your Bureau to this office re demonstration of unique telephone call diverter unit. Evening or weekend appointment anytime at his convenience.

"Richard Cross Marcom Corporation, 4244 Broadway, Oakland, Calif."

Bureau indices contain no record of Richard Cross Marcom Corporation. One [redacted] is referred to in your file number 29-1955. If review of your indices and files discloses no information which would preclude contact with Richard Cross Marcom Corporation, it is desired that you acknowledge telegram and have technically trained Special Agent determine nature of the telephone call diverter unit.

This matter should be handled expeditiously and reply directed to the attention of the FBI Laboratory. SUTEL in event contact with Richard Cross Marcom Corporation not recommended.

NOTE:

Reference to [redacted] San Francisco, California, appears in Bufiles 105-34074-47-119 and 29-34356.

RAM:ev

(7)

JUL 18 1966

MAIL ROOM

TELETYPE UNIT

JUL 12 1966

Tolson _____
DeLoach _____
Mohr _____
Wick _____
Casper _____
Callahan _____
Conrad _____
Felt _____
Gale _____
Rosen _____
Sullivan _____
Tavel _____
Trotter _____
Tele. Room _____
Holmes _____
Gandy _____

FEDERAL BUREAU OF INVESTIGATION
U. S. DEPARTMENT OF JUSTICE
COMMUNICATIONS SECTION

JUL 7 1966
WESTERN UNION

Mr. T. ✓
Mr. F. ✓
Mr. M. ✓
Mr. J. ✓
Mr. C. ✓
Mr. W. ✓
Mr. R. ✓
Mr. S. ✓
Mr. L. ✓
Tele. R.
Miss G.
Miss C.

CONFIDENTIAL MICROPHONE

BIA011 808P EDT JUL 7 66 0A218

O JDB620 NL PD JD OAKLAND CALIF 7

J EDGAR HOOVER, DIRI FEDERAL BUR INVESTIGATION

DEPT OF JUSTICE I WASH DC

REC 14

70 741-20

RESPECTFULLY INVITE REPRESENTATIVES YOUR BUREAU TO THIS OFFICE
RE DEMONSTRATION OF UNIQUE TELEPHONE CALL DIVERTER UNIT. EVENING
OR WEEKEND APPOINTMENT ANYTIME AT HIS CONVENIENCE

RICHARD CROSS MARCOM CORP 4244 BROADWAY OAKLAND CALIF.

JUL 12 1966

MR. DELOACH FOR THE DIRECTOR

Federal Bureau of Investigation
Records Branch

, 19__

☐ Name Searching Unit - Room 6527
☐ Service Unit - Room 6524
☐ Forward to File Review
☐ Attention _____
☒ Return to Frankenfield 5710
 Supervisor Room Ext.

Type of References Requested:

☐ Regular Request (Analytical Search)
☐ All References (Subversive & Nonsubversive)
☐ Subversive References Only
☐ Nonsubversive References Only
☐ Main _____ References Only

Type of Search Requested:

☐ Restricted to Locality of _____
☐ Exact Name Only (On the Nose)
☐ Buildup ☐ Variations

Subject Richard Cross Marcom, Inc.
 Birthdate & Place _____
 Address _____

Localities _____

R# _____ Date 7-7 Searcher Initials Jew
 Prod. _____

FILE NUMBER

SERIAL

b6

b7C -

105-34074-SUB 47; SERIALS
29-34356-1 (same)

. 19

☐ Name Searching Unit - Room 6527
☐ Service Unit - Room 6524
☐ Forward to File Review
☐ Attention _____
☒ Return to Frankenfield 5716
Supervisor Room Ext.

☐ Regular Request (Analytical Search)
☐ All References (Subversive & Nonsubversive)
☐ Subversive References Only
☐ Nonsubversive References Only
☐ Main _____ References Only

☐ Restricted to Locality of _____
☐ Exact Name Only (On the Nose)
☐ Buildup ☐ Variations

Subject Richard Crooks Marcom
Birthdate & Place _____
Address Oakland Cal

Localities

R# _____ Date 7-7 Initials HW

Prod. _____ //

FILE NUMBER

SERIAL

A handwritten signature in black ink on lined paper. The signature consists of a large, stylized 'M' followed by a large, stylized 'O'. The 'M' has a long, sweeping left tail that extends below the baseline. The 'O' is a large, open circle that also extends below the baseline. The signature is written on a set of horizontal lines.

Breakdowns
NK

FEDERAL BUREAU OF INVESTIGATION
U. S. DEPARTMENT OF JUSTICE
COMMUNICATIONS SECTION

JUL 7 1966
WESTERN UNION

Mr. Tolson	
Mr. DeLoach	
Mr. Mohr	
Mr. Wick	
Mr. Casper	
Mr. Callahan	
Mr. Conrad	
Mr. Felt	
Mr. Gale	
Mr. Rosen	
Mr. Sullivan	
Mr. Tavel	
Mr. Trotter	
Tele. Room	
Miss Holmes	
Miss Gandy	

BIA011 808P EDT JUL 7 66 0A218

O JDB620 NL PD JD OAKLAND CALIF 7

J EDGAR HOOVER, DIRIFEDERAL BUR INVESTIGATION

DEPT OF JUSTICEINASHDC

RESPECTFULLY INVITE REPRESENTATIVES YOUR BUREAU TO THIS OFFICE
RE DEMONSTRATION OF UNIQUE TELEPHONE CALL DIVERTER UNIT. EVENING
OR WEEKEND APPOINTMENT ANYTIME AT HIS CONVENIENCE

RICHARD CROSS MARCOM CORP 4244 BROADWAY OAKLAND CALIF.

ORIG: MR. DELOACH FOR DIRECTOR

*airtel to
JUL 7-8-66
by REAM
JUL 11 1966*

*Handled
by Lab*

Spw

UNITED STATES GOVERNMENT

Memorandum

TO : DIRECTOR, FBI (80-781)

DATE: 7/27/66

FROM : SAC, SAN FRANCISCO (66-3375)

SUBJECT: TELEPHONE CALL DIVERTER UNIT
RICHARD CROSS MARCOM CORPORATION
4244 BROADWAY
OAKLAND, CALIFORNIA

CONFIDENCE MICROPHONE

Re Bureau airtel, 7/8/66.

Marcom Corporation, 4244 Broadway, Oakland, California, was contacted in reference to the development of the call diverter unit.

 advised that this unit was developed approximately three years ago and that it has been accepted by and is a part of the official tariff of the independent, telephone companies in thirty-nine states.

He advised that this unit has not as yet been accepted by any member of the Bell Telephone System, however, the negotiations are such in California that the acceptance of an official tariff by the California Public Utilities Commission will be made within the near future.

 described the unit as an electro mechanical device that is attached to two telephone lines or to two telephones whereby a telephone call that is received on one telephone is automatically transferred to a pre-selected number and sent out on the second telephone line. 80-781-21

He further advised that this unit has great value as a burglar alarm system in that it can be plugged in during night hours to a telephone line and that when any alarm circuit is broken that is connected to the device, the device will dial a pre-selected phone number and

2 - Bureau (Encl. 1)
2 - San Francisco
WHW:Kec

55 AUG 15 1966

NO REPLY NECESSARY
ANSWER TO BUREAU
INQUIRY.

ENCL. & ICC RETAINED IN LAG
Room 7114, 8/1/66

SEARCHED
SERIALIZED
INDEXED
FILED

SF 66-3375

WHW:kec

sound an alarm and in the event the phone is busy, will continue calling until the circuit is completed.

[] advised that the unit is not supposed to be sold except for the connection to private telephone lines and that in those instances, where it is furnished by telephone company as a part of their tariff, a monthly charge is made by the particular phone company.

b6
b7C

There is being included brochures which adequately describe and picture the unit together with price lists and related information.

FEDERAL BUREAU OF INVESTIGATION
WASHINGTON, D. C. 20535

DATE:

2/14/77

Re:

TECH EQUIP

TO:

SAC. BOSTON

ATTN: S.A. MIKE STUART

Invoice of Contents

1 ea. HEKIMIAN ZONE GENERATOR MODEL SATQ S/N 300 FOR
CALL DIVER ~~SYSTEM~~

MAILED 17

FEB 14 1977

- ☐ Crypt.-Trans.
☐ Document
☒ P & C
☒ Radio Engineering
☐ LRPS

Special Instructions:

Mail Room: Show shipment date and registry number.
Shipping Room: Show shipment date; bill of lading number;
initial invoice; return to Section checked in block; after
initialing in block, invoice to be placed in administrative file.

FBI File No. 80-731

(141)

1405
FBI BUREAU TOUCH

2 - Admin Services Div
(1 - Prcmnt, Rm 6823 JEH)
(1 - Invtry, Rm 6132 JEH)
1 - Lab Invtry Mgt, Rm 1B239
1 - Sect Invtry Mgt

SAC, Boston
Attn: Mike Stuart

2/3/77

Director, FBI (80-781)

TECHNICAL EQUIPMENT

Confidential microphone

☐ Equipment listed below has been received. After repairs have been made it will be returned to your office.

☐ Equipment listed below has been repaired and is being returned to your office.

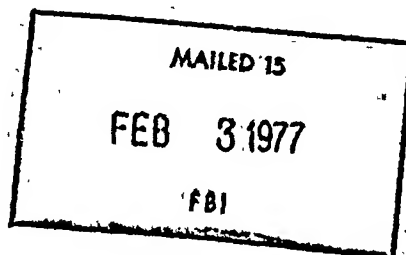
☒ Equipment listed below is being shipped to your office for ☐ permanent ☒ temporary assignment. Appropriate inventory changes should be made. on 2/1/77

☐ Your request for equipment listed below has been placed on record and ☐ will be considered ☐ will be ordered when funds are available.

☐ 1 ea. Tone generator model 84TG S/N 400 for call diverter system.

You are reminded that some uses of technical equipment require prior FBIHQ or other authority.

TLM:rrr
(7)



80-781-

NOT RECORDED
7 FEB 7 1977

MAIL ROOM ☒ TELETYPE UNIT ☐
54 FEB 9 1977

FEDERAL BUREAU OF INVESTIGATION
WASHINGTON, D. C. 20535

DATE: **2/1/77**

Re:

TECH EQUIPMENT

TO: **SAC, BOSTON**

ATTN: MIKE STUART

Invoice of Contents

1 EA HEKIMIAN TONE GENERATOR MODEL 84TG S/N 400 FOR CALL DIVERTER

☐ Crypt.-Trans.

☐ Document

☒ Radio Engineering

☐ LFPS

MAILED

FEB 01 1977

FBI

717429

FBI File No. **80-781**

Special Instructions:

Mail Room: Show shipment date and registry number.
Shipping Room: Show shipment date; bill of lading number;
initial invoice; return to Section checked in block; after
initialing in block, invoice to be placed in administrative file.

"VIA REGISTERED MAIL"

70 FEB 2 1977

2/1/77

1 - Mr. Wilgus

SAC, Las Vegas
(Attn: SA R. J. McKinley)

February 19, 1974

Director, FBI (80-781)

TECHNICAL EQUIPMENT
TELEPHONES - GENERAL

Instruments

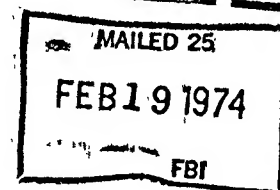
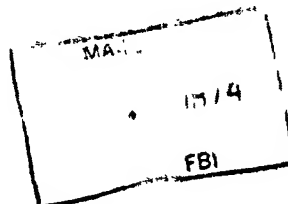
☐ Equipment listed below has been received. After repairs have been made it will be returned to your office.☐ Equipment listed below has been repaired and is being returned to your office.☒ Equipment listed below is being shipped to your office for ☐ permanent ☒ temporary assignment. ~~XXXXXXXXXXXXXXXXXXXXXXXXXXXX~~☐ 1 each Telepatcher, KTS-500, serial number H-351

This equipment is being lent to your office to determine its usefulness at your night clerk's station. If, after trial, it is judged to be useful, you may wish to arrange for permanent acquisition of a similar device, either from the manufacturer or through your local telephone company on a lease basis.

Wilgus 8080 PD
2nd timeJPW:mrg
(4)

BJW/RAM/wm

80-781-

NOT RECORDED
4 FEB 20 197414
56 FEB 21 1974MAIL ROOM ☒TELETYPE UNIT ☐

1 - Mr. Wilgus

SAC, Las Vegas
(Attn: SA R. J. McKinley)
Director, FBI (80-781)

February 13, 1974

TECHNICAL EQUIPMENT
TELEPHONES - GENERAL

0
Toll Line & T.E. MA. 117 Series

- ☐ Equipment listed below has been received. After repairs have been made it will be returned to your office.
- ☐ Equipment listed below has been repaired and is being returned to your office.
- ☒ Equipment listed below is being shipped to your office for ☐ permanent ☒ temporary assignment. ~~XXXXXXXXXXXXXXXXXXXXXXXXXXXX~~

☐ 1 each Telepatcher, KTS-500, serial number H-351

This equipment is being lent to your office to determine its usefulness at your night clerk's station. If, after trial, it is judged to be useful, you may wish to arrange for permanent acquisition of a similar device, either from the manufacturer or through your local telephone company on a lease basis.

Fisher Rm 7839 (INFO)

JPW:mrg
(4)

NOT RECORDED
22 FEB 14 1974

BSW/RAM/wet
FEB 13 3 24 PM '74

MAILED 2
FEB 13 1974
FBI

E B J
CHIEF'S OFFICE

57 MAR 12 1974
MAIL ROOM ☒

TELETYPE UNIT ☐

2-6a (Rev. 1-19-67)

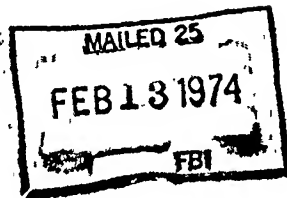
FEDERAL BUREAU OF INVESTIGATION
WASHINGTON, D. C. 20535

DATE: 2/13/74

Re: TECHNICAL EQUIPMENT

TO: SAC, LAS VEGAS
ATTN: SA, BOB Mc KINLEY

118563



Invoice of Contents

1 ea. Telepatcher model KTS-500 SN. H-351
and Manual.

☐ Crypt.-Trans.
☐ Document
☒ P & C
☒ Radio Engineering
☒ LFPS

Special Instructions:

Mail Room: Show shipment date and registry number.
Shipping Room: Show shipment date; bill of lading number;
initial invoice; return to Section checked in block; after
initialing in block, invoice to be placed in administrative file.

FBI File No. 80-781

51 FEB 20 1974 REGISTERED AIR MAIL

(Rev. 1-19-67)

FEDERAL BUREAU OF INVESTIGATION
WASHINGTON, D. C. 20535

DATE: 12/8/72

Re: EVALUATION UNIT

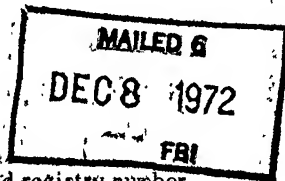
TO: TELEPHONIC EQUIPMENT CORP.
17281 EASTMAN STREET
IRVINE INDUSTRIAL COMPLEX
SANTA ANA, CALIFORNIA 92705

Invoice of Contents

ONE (1) EA. KTS-500

☐ Crypt.-Trans.
☐ Document
☒ V. & C
☒ Radio Engineering
☐ LFPS

718451



Special Instructions:

Mail Room: Show shipment date and registry number.
Shipping Room: Show shipment date; bill of lading number;
initial invoice; return to Section checked in block; after
initialing in block, ~~initial invoice~~ placed in administrative file.

FBI File No. NONE

80-781

REGISTERED AIR MAIL

FEDERAL BUREAU OF INVESTIGATION
WASHINGTON, D. C. 20535

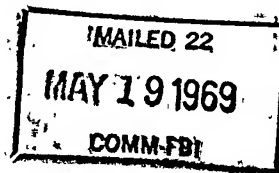
DATE: 5-19-69

Re: TECHNICAL EQUIPMENT

TO: SAC SAN FRANCISCO

Invoice of Contents

1 EA HAND TEST SET



715992

- ☐ Crypt.-Trans.
- ☐ Document
- ☐ P. & C.
- ☒ Radio Engineering
- ☐ FPS

Special Instructions:

Mail Room: Show shipment date and registry number.
Shipping Room: Show shipment date; bill of lading number;
initial invoice; return to Section checked in block; after
initialing in block, invoice to be placed in administrative file.

FBI File No. 80-781

REURLET 5/7/69

70 MAY 21 1969
MAILED REGISTERED

Att:
 1 -

b6
b7c

80-781

80-781 *871*

May 20, 1969

Special Agent in Charge, San Francisco (66-440)

Re: TECHNICAL EQUIPMENT

Dear Sir:

Reurlet 5/7/69.

R 9 TOLL LINE AND FIVE NAUGHT 500 SERIES
INSTRUMENTS

☐ Equipment listed below has been received. After repairs have been made it will be returned to your office.

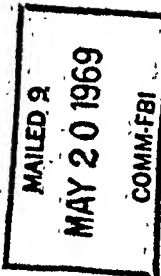
☐ Equipment listed below has been repaired and is being returned to your office.

☐ Equipment listed below is being shipped to your office for ☐ permanent ☐ temporary assignment. Appropriate inventory changes should be made.

☒

Equipment requested in relet being forwarded under separate cover. No inventory change necessary.

for
JGW:sdh
(5)



Tolson _____
DeLoach _____
Mohr _____
Bishop _____
Casper _____
Callahan _____
Conrad _____
Felt _____
Gale _____
Rosen _____
Sullivan _____
Tavel _____
Trotter _____
Tele. Room _____
Holmes _____
Gandy _____

Very truly yours,

J. Edgar Hoover
John Edgar Hoover
Director

jwc/wwb/ram
354

70 MAY 23 1969

TELETYPE UNIT ☐

UNITED STATES GOVERNMENT

Memorandum

TO : DIRECTOR, FBI
ATTN: RADIO AND ELECTRICAL SECTION

FROM : *CWB* SAC, SAN FRANCISCO (66-440)

SUBJECT: TECHNICAL EQUIPMENT
SAN FRANCISCO DIVISION

DATE: 5/7/69

It is requested that the Bureau forward to San Francisco a replacement telephone lineman's test set, black rubber finish with a large dial to replace a metal test set that was broken when dropped from a pole to the pavement below. Inasmuch as this is a replacement, no inventory change will be made.

Profile 80-781

diff 80-781-
87
NOTED
MAY 8 1969
et

b6
b7c

2 - Bureau
1 - San Francisco
WHW:svl
(3)



5010-108-02

*1cc Hdd's Eng
Tech Letter
SAC, San Francisco
JAW:sdh 5/20/69*

Buy U.S. Savings Bonds Regularly on the Payroll Savings Plan

SEVEN

UNITED STATES GOVERNMENT

Memorandum

TO : Mr. Cochran *90/175*

DATE: 2-6-79

FROM : W.D. Campbell *WDC*

SUBJECT: ~~COLBY COMMUNICATION CENTER~~ *USA*

Assoc. Dir. _____
Dep. AD Adm. _____
Dep. AD Inv. _____
Asst. Dir.: _____
Adm. Serv. _____
Crim. Inv. _____
Fin. & Pers. _____
Ident. _____
Intell. _____
Laboratory _____
Legal Coun. _____
Plan. & Insp. _____
Rec. Mgmt. _____
Spec. Inv. _____
Tech. Serv. _____
Training _____
Public Affs. Off. _____
Telephone Rm. _____
Director's Sec'y _____

PURPOSE:

U.S.A. The purpose of this memorandum is to set forth information received concerning the relationship between ~~Colby Division of Ratcliff Company, Inc.~~ and Chandler and Companies. *Toll Line and Five Naught Naught Series*

DETAILS:

U.S.A. On 1-26-79, [redacted] *Chandler* and Companies, Reno, Nevada, telephonically advised SA [redacted] that his company has ceased being the marketing representative for the Colby Communication Center manufactured by the Colby Division of Ratcliff Company, Inc.

[redacted] advised that the Bureau order for four Colby Communication Centers has been processed and would not be affected by the severing of the relationship. The reason for severing the relationship was explained as a difference in philosophy between the two companies in marketing techniques and manufacturing schedules.

[redacted] stated that his company intends to market a new negotiation center manufactured by Chandler and Companies. This device will provide the basic telephonic interface needed for negotiations, and eliminate the radio patch function and probably the headset amplifier function, for an audio only net. The reason for this move is to provide a basic negotiation center at a price between \$1500 - \$2000, *AC*

- 432*
- 1 - Mr. Joseph
ATTN: Behavioral Science Unit
 - 1 - Mr. Moore
ATTN: Mr. L. Stephens *DE-35*
 - 1 - Mr. Cochran
 - 1 - Mr. Campbell *WDC*
 - 1 - [redacted]
 - 1 - Mr. Heineman
 - 1 - Mr. Naylor

(CONTINUED OVER)

WHK:cbc* *100-79*

(10) *100-79*

Buy U.S. Savings Bonds Regularly on the Payroll Savings Plan



5010-110

FBI/DOJ

MEMO COLBY COMMUNICATIONS CENTER

and thus within the cost range that would be affordable for small police departments, as well as the larger departments. Prototype units are scheduled to be available in April, 1979. At that time, one each will be sent to the Bureau, Los Angeles Police Department, New York City Police Department and several other Federal and local agencies for evaluation purposes.

RECOMMENDATION:

None. For information only.

WDC/gm

APPROVED:

Director _____
Assoc. Dir. _____
Dep. AD Adm. _____
Dep. AD Inv. _____

Adm. Serv. _____
Crim. Inv. _____
Ident. _____
Intell. _____
Laboratory _____

Legal Coun. _____
Plan. & Insp. _____
Rec. Mgnt. _____
Tech. Servs. _____
Training _____
Public Affs. Off. _____

90/23

Airtel

4/8/80

To: SAC, Miami
Attention: SA Ben Grogan

1 - Mr. Bayse
1 - Mr. Witzel
1 -
1 - Mr. Heineman

From: Director, FBI

111 CORPORATION

Toll Free and Fax No. 1-800-251-1111
Series 1-111-1111

This communication refers to a specialized telephone intercept device being constructed for the FBI by an anonymous client of (attorney).

was in contact with SA Grogan in the summer of 1979, after which SA Grogan referred the matter to FBIHQ, Engineering Section. The inventor of this telephone device has formed a corporation and in February, 1980, a purchase order for \$100 was issued to the corporation for the construction of a prototype device.

has steadfastly refused to disclose the identity of his client, the inventor of this device. However, since a corporation has now been formed, information about the corporation is now open to inspection.

b6
b7c

The name of the corporation is 111 Corporation. No further information is available. Information re is:

6120 Washington Street
Hollywood, Florida 33023

and

Miami is requested to obtain all available information concerning the 111 Corporation, including identity of officers, officers personal background, financial status and financial backing.

16 APR 9 1980

WRH:kgb**K*

(7)

Exec AD Inv. _____
Exec AD Adm. _____
Exec AD LES _____
Asst. Dir.:
Adm. Servs. _____
Crim. Inv. _____
Ident. _____
Intell. _____
Laboratory _____
Legal Coun. _____
Plan. & Insp. _____
Rec. Mgnt. _____
Tech. Servs. _____
Training _____
Public Affs. Off. _____
Telephone Rm. _____
Director's Sec'y _____

APPROVED:

Adm. Serv. _____
Crim. Inv. _____

Leg. Coun. _____
Plan. & Insp. _____
Rec. Mgnt. _____
Tech. Servs. _____
Training _____
Public Affs. Off. _____

MAILED 16

APR 8 1980

FBI

BUfile 80-781

MAIL ROOM ☒

Airtel to SAC, Miami
Re: 111 Corporation

Miami should also check indices on all persons
involved in the 111 Corporation, [redacted]
[redacted] and [redacted]

b6
b7C

NOTE: This communication will secure additional information concerning the background of persons currently furnishing Title III equipment to the FBI so that a better evaluation can be made regarding their professional responsibility.

UNITED STATES GOVERNMENT

Memorandum

UNITED STATES DEPARTMENT OF JUSTICE
FEDERAL BUREAU OF INVESTIGATION

Exec AD Inv. _____
 Exec AD Adm. _____
 Exec AD LES _____
 Asst. Dir.: _____
 Adm. Serv. _____
 Crim. Inv. _____
 Ident. _____
 Intell. _____
 Laboratory _____
 Legal Coun. _____
 Plan. & Insp. _____
 Rec. Mgnt. _____
 Tech. Servs. _____
 Training _____
 Public Affs. Off. _____
 Telephone Rm. _____
 Director's Sec'y _____

TO : Mr. Bayse *WKB*

DATE: 9/25/80

FROM : R. W. Witzel *RWW*

SUBJECT: TRIP REPORT OF 9/9-10/80
TO LOUISVILLE FIELD OFFICE
TECHNICAL ASSISTANCE - PEN REGISTER

Reference Louisville teletype, dated 9/8/80, copy attached.

CONFIDENTIAL MICROPHONE

PURPOSE: To report the results from the trip of [redacted] to Louisville, Kentucky, for technical assistance in a pen register installation.

DETAILS: The Louisville Office has for several weeks been unsuccessful in recovering dialed numbers from four telephone lines. The following parameters and problems were found with the installation:

- (1) All four lines leased from the telephone company were about 14 miles from the plant (all carrier).
- (2) The Beta method was employed for number retrieval using loop extenders, SAR's, and 51-C DNR in the circuit.
- (3) Problem 1:

V-48 DE-42, 80-791-24
 The battery feed from the telephone company was not correct. Four separate feed lines were requested with no commonality existing between them. The telephone company used a common feed circuit resulting in insufficient voltage for four loop extenders. Also, intermodulation existed in all four circuits.

Problem 2:

The bridge was essentially in the central office resulting in an off-hook voltage of 38V (normal 10V).

- 1 - Mr. Bayse
 1 - Mr. Witzel
 1 - Mr. Heineman

1 - [redacted]
 1 - [redacted]
 TLM/amb (6)

(CONTINUED-OVER)

OCT 2 1980

b6
 b7c

Bufile 80-781

R. W. Witzel to Mr. Bayse Memorandum
RE: TRIP REPORT OF 9/9-10/80

Problem 3:

One of the SAR's in the plant had the ground post on the 110V plug clipped off.

(4) Results and recommended corrections:

Problem 1:

Request the telephone company to provide four independent battery feed lines for the loop extenders. If this is not possible, the FBI will provide its own battery feed at the bridge point. A power supply was sent to Louisville 9/10/80, and will arrive at 7:10 p.m., same date. Intermodulation problem was corrected by terminating the battery feed terminals of each loop extender with a 20 MF capacitor.

Problem 2:

All loop extenders were recalibrated for a 43V threshold voltage (normal 40V).

Problem 3:

Use a new power cord for the SAR.

RECOMMENDATION: None. For information only.

APPROVED:	Adm. Serv. _____	Legal Coun. _____
	Crim. Inv. _____	Plan. & Insp. _____
Director _____		Rec. Mgnt. _____
Exec. AD-Adm. _____	Ident. _____	Tech. Servs. <i>WSS/AT</i>
Exec. AD-Inv. _____	Intell. _____	Training _____
Exec. AD-LES _____	Laboratory _____	Off. of Cong. & Public Affs. _____

S P E C I A L

8 SEP 80 16 02Z

RECEIVED
FEDERAL BUREAU
OF INVESTIGATION
COMMUNICATIONS SECTION

Exec AD-Adm.	_____
Exec AD-Inv.	_____
Exec AD-LES	_____
Asst. Dir.:	_____
Adm. Serv.	_____
Crim. Inv.	_____
Ident.	_____
Insp.	_____
Intell.	_____
Lab.	_____
Legal Coun.	_____
Plan. Insp.	_____
Rec. Mgmt.	_____
Tech. Serv.	_____
Training	_____
Off. of Cong. & Public Affs.	_____
Telephone Rm.	_____
Director's Sec'y	_____

LS0001 2521539

OO HQ

DE LS

O 081530Z SEPT 80

FM FBI LOUISVILLE (183-164) (P)

TO DIRECTOR FBI IMMEDIATE

ATTENTION: TECHNICAL SERVICES DIVISION, ENGINEERING SECTION

BT
UNCLAS

Engine Room S at
12040 1000 11004

[REDACTED] ET AL; RICO (B); OO: LOUISVILLE.

RE LOUISVILLE TELCAL TO BUREAU SUPERVISORS WILLIAM HEINEMAN
AND [REDACTED] SEPTEMBER 8, 1980.

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b7C

AS REFERRED TO IN REFERENCED TELCAL, LOUISVILLE HAS FOUR COURT
ORDERED PEN REGISTERS IN CAPTIONED CASE. LOUISVILLE IS ATTEMPTING
TO MONITOR PEN REGISTERS FROM LOUISVILLE OFFICE VIA 14 MILE OF
CARRIER LINES WITH NO SUCCESS. IT IS REQUESTED THAT AN ENGINEERING
SECTION REPRESENTATIVE TRAVEL TO LOUISVILLE AS SOON AS POSSIBLE
TO PROVIDE ASSISTANCE TO SOUND TRAINED AGENTS AT LOUISVILLE.

BT
#001

80-788-24
Crim Inv Div
ENCLOSURE

2 - Technical Services Div
 1 - Invtry Rm 1835
 1 - Eng Invtry Mgt Rm 1B016
 2 - Laboratory Div
 1 - Lab Invtry Mgt Rm 1B239
 1 - Sect Invtry Rm 3456

SAC, Los Angeles

Attention: SA

7/23/82

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Director, FBI

 1 -
 1 -

TECHNICAL EQUIPMENT

Telephones (80-781)

Quantico *1/10/82*

☐ Equipment listed below has been received. After repairs have been made it will be returned to your office.

☐ Equipment listed below has been repaired and is being returned to your office.

☒ Equipment listed below is being shipped to your office for ☒ permanent ☐ temporary assignment. Appropriate inventory changes should be made.

☐ Your request for equipment listed below has been placed on record and ☐ will be considered ☐ will be ordered when funds are available.

The item(s) ☐ has ☐ has not; ☒ have ☐ have not; been put on automated inventory.

The item(s) ☐ does ☐ does not; ☒ do ☐ do not; have a label affixed.

☐ 12 each telephone punch-on terminal blocks with covers

2 each red field terminal blocks

1 each patch panel model ADC bantam jackfield, S/N 10

Note: Red fields and patch panel shipped from Quantico via U. S. Mail.

TLM:emb *emb* (7)

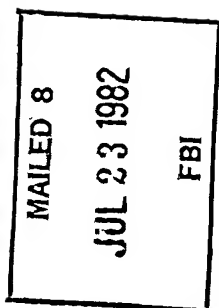
NOT RECORDED

1 JUL 23 1982

296

MAIL ROOM ☒

J/K



FEDERAL BUREAU OF INVESTIGATION
20535

Date: 7/20/82

Re: TECHNICAL EQUIPMENT

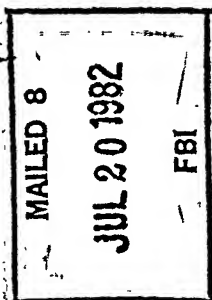
To: SAC LOS ANGELES
ATTN:

Invoice of Contents

FBI File # 80-781 *W*

12 ea telephone punch-on terminal blocks with covers
2 ea red field terminal blocks
1 ea patch panel model ADC bantam jackfield SN 10

Note: Red fields and patch panel shipped from Quantico VIA U.S. MAIL.

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717703

717704

717705

ENGINEERING SECTION DOCUMENTATION

RETURN TO ENGINEERING SECTION, ROOM 1B046 (Telelift 253)

Name of Shipper Ext. 2741 QTShip By & HQ
(method to use)This Shipment Packaged by & HQ

Shipping # 174

No. of Packages 3

EXECUTE FD-514 TRANSFER EQUIPMENT FOR PERMANENT ASSIGNMENT

FEDERAL BUREAU OF INVESTIGATION
WASHINGTON, D. C. 20535

Date: 4/26/82

Re: TECHNICAL EQUIPMENT

To: SAC LOUISVILLE
ATTN: SA LARRY BOND

Invoice of Contents

FBI File # 80-781

2 each amphenol punch on blocks

ENGINEERING SECTION DOCUMENTATION

RETURN TO ENGINEERING SECTION, ROOM 18046 (Telelift 253)

Name of Shipper [REDACTED] Ext. 2741

Ship By U.S. MAIL
(method to use)

This Shipment Packaged by [REDACTED]

Shipping # None

No. of Packages [REDACTED]

EXECUTE FD-514 TRANSFER EQUIPMENT FOR PERMANENT ASSIGNMENT

2 - Technical Services Div.
 1 - Invtry Rm 1835
 1 - Eng Invtry Mgt Rm 1B016
 2 - Laboratory Div
 1 - Lab Invtry Mgt Rm 1B239
 1 - Sect Invtry Rm 3456

SAC, Cleveland
 Attention: SA [redacted]

4/20/82

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 b7C

Director, FBI

1 - [redacted]
 1 - [redacted]

TECHNICAL EQUIPMENT

CMP (80-781)

Confindex Microphone

☐ Equipment listed below has been received. After repairs have been made it will be returned to your office.

☐ Equipment listed below has been repaired and is being returned to your office.

☒ Equipment listed below is being shipped to your office for ☒ permanent
☐ temporary assignment. Appropriate inventory changes should be made.

☐ Your request for equipment listed below has been placed on record and
☐ will be considered ☐ will be ordered when funds are available.

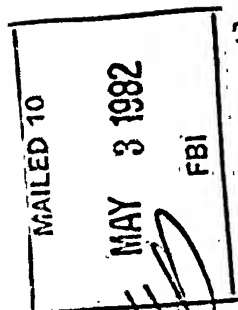
The item(s) ☐ has ☐ has not; ☐ have ☐ have not; been put on automated inventory.

The item(s) ☐ does ☐ does not; ☐ do ☐ do not; have a label affixed.

☐ 6 each punch-on terminal blocks 25 pair

6 each covers for 66 terminal blocks

Note: Equipment requested telephonically by SA Carmon Laparo on 4/15/82. To be used in technical plant wiring in new office space.



TLM:emb (7)

80-781-

NOT RECORDED

15 MAY 4 1982

MAIL ROOM

FEDERAL BUREAU OF INVESTIGATION
WASHINGTON, D. C. 20535

Date: 4/16/82

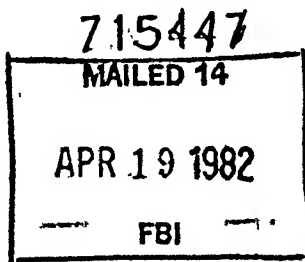
Re: Technical Equipment

To: SAC Cleveland

Attn: SA [redacted]

Invoice of Contents

FBI File # 80-781

6 ea 66 punch-on terminal blocks 25 pair.
6 ea covers for 66 terminal blocks.Note: Equipment requested ~~XXXXX~~ telephonically by [redacted] on
4/15/82. To be used in technical plant wiring in new office
space.b6
b7cAPR 19 10 27 AM '82
ENGINEERING
TSD

ENGINEERING SECTION DOCUMENTATION

RETURN TO ENGINEERING SECTION, ROOM 1B046 (Telelift 253)

Name of Shipper [redacted]

Ext. ~~2X~~ 2741

Ship By

Reg. Mail
(method to use)

This Shipment Packaged by [redacted]

Shipping #

191

No. of Packages

1

EXECUTE FD-514 TRANSFER EQUIPMENT FOR PERMANENT ASSIGNMENT

60 APR 21 1982

FEDERAL BUREAU OF INVESTIGATION
WASHINGTON, D. C. 20535

DATE:

TO:

11/6/81

Re:

Technical Equipment

SAC Chicago

Attn:

Invoice of Contents

1 each Bushcom Extender Model 2009
SN 50330 PN 448783

[Signature]
Return to
ENGINEERING SECTION
Room **1B046** TL **253**
FBI File # **80-781**
Case #

☐ Mail Room: 1B327, TL 152
(registered mail)

☐ PSM - Supply Unit, 1B353
(not registered)

Hand carried by SA on 11/6/81
to the Chicago office.

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Shipping # _____

Shipping Method _____

FBI/DOJ

157
60 NOV 13 1981

Memorandum

~~Secret~~ Material Attached



Exec AD Adm. _____
Exec AD Inv. _____
Exec AD Leg. _____
Asst. Dir. _____
Adm. Serv. _____
Crim. Inv. _____
Ident. _____
Insp. _____
Intell. _____
Lab. _____
Legal Coun. _____
Off. Cong. & _____
Public Affs. _____
Rec. Mgnt. _____
Tech. Servs. _____
Training _____
Telephone Rm. _____
Director's Sec'y _____

To : Mr. Bayse *WMB/ko*

Date 11/23/82

From : R. W. Witzel *R. W. Witzel*

Subject : ~~MINIATURE TAPE RECORDERS~~

Confidence & Microphone

REFERENCES: 1. By approved memorandum R. W. Witzel to Mr. Bayse dated 4/18/80, captioned as above, the FBI contracted to procure 95 Nagra Model JBR recorders and playbacks.

2. Memorandum R. W. Witzel to Mr. Bayse dated 9/25/80, reporting the results of the only on-site contract monitoring trip and requesting approval for a future two-man contract monitoring trip to the manufacturer in Cheseaux, Switzerland. (Copy attached).

3. Cablegram Kudelski, S.A., Cheseaux, Switzerland, to FBIHQ, Attn: SA [redacted] advising status of contract and requesting a contract review meeting at Kudelski, S.A., Cheseaux, Switzerland, last of November, 1982, to review breadboard of recorder and playback units before a small assembly line run is made to produce units for field evaluation. (Copy attached).

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DETAILS: By referenced memorandum dated 9/25/80, the results of the on-site contract monitoring trip were reported and approval was requested for a future two-man contract monitoring trip to evaluate the breadboard recorder and playback units. By referenced cablegram, the manufacturer has advised that the breadboard recorder and playback units will be available for evaluation last of November, 1982. Manufacturer requests that Contracting Officer's Technical Representative (COTR) travel to Cheseaux, Switzerland, to test, analyze and choose alternative ways of meeting contract specifications. Numerous new, innovative and untried features are being utilized in the Nagra Model JBR recorders and will require extensive testing, analysis and debugging to produce the best units. SA [redacted] will handle the technical evaluation of the breadboard recorder and playbacks and SA [redacted] will handle hybrid circuit technology. The costs will be \$992 in air travel plus seven days per diem at \$81 per day for a total cost of \$1,559 per person.

- 1 - Mr. O'Malley
Attention: Liaison Unit
- 1 - Mr. Groover
- 1 - Mr. Bayse
- 1 - Mr. Witzel
- 1 - [redacted]
- 1 - [redacted]

CLOSURE

JBR:jmh (7)

(CONTINUED - OVER)

V-18
DE-42

80-781-25

15 DEC 7 1982

Witzel to Bayse Memo
RE: MINIATURE TAPE RECORDERS

Both the FBI and [] have active programs to develop and build more effective digital adaptive filters. [] existing FBI digital adaptive filters were demonstrated and [] advised that the FBI had contracted to procure two significantly improved units. SA [] is the COTR on FBI Contract #J-FBI-82-098 to procure these digital adaptive filters. These filters are used to remove masking sound sources, such as a TV and/or radio from an intercepted conversation []

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[] SA [] and SA [] is the signal processing project manager. Authority is being requested for SA's [] and [] to stopover at [] enroute to Switzerland [] The only costs involved would be a \$25 stopover fee and 2 days per diem at \$105.*

In early 1982, the FBI provided []

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[] It is being proposed that SA's [] and [] stopover in [] and evaluate this device. The total cost will be \$25 stopover fee and 2 days per diem at \$87.

RECOMMENDATIONS: 1. That SA's [] and [] be authorized to travel to Cheseaux, Switzerland, to monitor FBI Contract #J-FBI-8020. Total travel expenses will be \$3,118.

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APPROVED:

Director []

Exec. AD-Adm. []

Exec. AD-Inv. []

Exec. AD-LEG []

Adm. Servs. []

Crim. Inv. []

Ident. []

Inspection []

Intell. []

Laboratory []

Legal Coun. []

Cff. of Cong. []

& Public Affs. []

Rec. Mgmt. []

Tech. Servs. []

Training []

2. That SA's [] and [] be authorized to stopover in []

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b7D

[] at a total cost of \$470.

APPROVED:

Director []

Exec. AD-Adm. []

Exec. AD-Inv. []

Exec. AD-LEG []

Adm. Servs. []

Crim. Inv. []

Ident. []

Inspection []

Intell. []

Laboratory []

Legal Coun. []

Cff. of Cong. []

& Public Affs. []

Rec. Mgmt. []

Tech. Servs. []

Training []

Witzel to Bayse Memo
RE: MINIATURE TAPE RECORDERS

3. That SA's [] and [] be authorized to stopover in []
to inspect, test and evaluate a small encrypted transmitter at a total cost of
\$398. b6
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b7D

SR APPROVED: Adm. Servs. *AK* Laboratory _____
Crim. Inv. _____ Legal Coun. _____
Director _____ Off. of Cong. & Public Affs. _____
Exec. AD-Inv. *SL* Ident. _____ Rec. Mgmt. _____
Exec. AD-LES _____ Inspection _____ Tech. Servs. *WAB/B*
Intell. *g/p/p* Training _____

Enclosures (2)

ROUTE IN ENVELOPE

~~SECRET~~

Mr. Bayse

9/25/80

R. W. Witzel

MINIATURE TAPE RECORDERS

REFERENCE: Memorandum R. W. Witzel to Mr. Bayse dated July 13, 1980, captioned "Miniature Tape Recorders." (U)

PURPOSE: To report and place on record the results of the first contract monitoring trip on FBI Contract #J-FBI-8020. (U)

To recommend a second contract monitoring trip to evaluate, test, analyze and select the best record gain system, drive motor design and record head design. (U)

SYNOPSIS: From August 25 to 31, 1980, SAs [] and [] and ET [] met with contractor representatives and reviewed the progress on FBI Contract #J-FBI-8020. The following improvements to the recorder ~~are~~ being recommended: (U)

1. Install strain relief for the mike cable, increasing the length of recorder by 5mm. (U)
2. Install four size "N" batteries for the power supply, increasing recorder thickness by 2mm. (U)
3. Utilize a digital watch crystal for the tachymetrical signal. (U)
4. Record the tachymetrical signal in the center of the tape. (U)
5. Adjust the frequency response to be flat with the mikes under clothing. (U)
6. Specify total harmonic distortion to be less than 5 percent. (U)
7. Include a playback pencil. (U)

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1 - Mr. Bayse
1 - []
1 - []
1 - Mr. Witzel
1 - []
1 - []

CLASSIFIED AND EXTENDED BY 6445
REASON FOR EXTENSION FCIM, II,
1.2.42 (2), 3
DATE OF REVIEW FOR DECLASSIFICATION
September 25, 2000

(CONTINUED - OVER)

JBR:lab
(7)

~~SECRET~~

ENCLOSURE

80-78125

Memorandum to Mr. [redacted] ayse
Re: MINIATURE TAPE RECORDERS

~~SECRET~~

8. Install a hinged lid. (U)
9. Install an audio output connector and an external power input connector. (U)
10. Design and install [redacted] (S) (U)
11. Design and install a new low-speed drive motor. (U)
12. Design and install a new high isolation head. (U)

b7E

The following improvements are being recommended for the playback unit: (U)

1. Utilize the servo system of the Nagra "T" audio recorder. (U)
2. Add a capstan motor, a capstan, a pinch roller and associated electronics. (U)
3. Add playhead azimuth adjustment. (U)
4. Add a 2,048 Hertz nulling circuit. (U)
5. Add a treble control. (U)
6. Add level meters. (U)
7. Add 40 dB gain amplifier. (U)
8. Add four times playback speed capability. (U)
9. Add a remote start signal. (U)
10. Add a tachymetrical output connector. (U)

As reflected in the details, numerous new and innovative features are being proposed for the Nagra Model JBR recorder. Many of these features are untried and have not been implemented in a small, low power, high reliability, professional body recorder. To develop, test, debug and analyze all of these features will require extensive contract monitoring. A two-man contract monitoring trip will be required to monitor these changes. The costs per employee will be \$1,200 air travel plus six days per diem at \$100 per day for a total travel cost of \$3,600. This is a very small price to pay for changes worth more than \$200,000. This travel is necessary and should be approved. (U)

~~SECRET~~ 2 -

Memorandum to Mr. Bayse
Re: MINIATURE TAPE RECORDERS

~~SECRET~~

RECOMMENDATIONS: 1. That the listed improvements to the Nagra Model JBR recorder be approved. (U)

2. That the listed improvements to the Nagra Model PU-1 playback be approved. (U)

~~TOP SECRET~~

3. That a two-man contract monitoring trip to the manufacturer in Lausanne Switzerland be approved. (U)

DETAILS: By sole source negotiated contract number J-FBI-8020, the FBI contracted with Nagra Magnetic Recorders, Inc., New York, New York, to procure 95 Nagra Model JBR Miniature Stereo tape recorders, 95 Nagra Model PU-1 Playback Units and three Nagra Model TBEC Time Base Error Corrector Units at a total price of 738,302.68 Swiss Francs. Nagra recording equipment is developed and manufactured by Kudelski, S.A., Lausanne, Switzerland. (U)

By memorandum dated July 18, 1980, captioned "Miniature Tape Recorders," it was approved for Contracting Officer's Technical Representatives, SA [] and ET [] to travel to Lausanne, Switzerland, to review all alternatives for meeting FBI contract specifications and to select the best alternatives. (U)

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Memorandum to Mr. Bayse
Re: MINIATURE TAPE RECORDERS

~~SECRET~~

By addendum to this memorandum, it was approved for Special Assistant to the Assistant Director [redacted] to participate in this review since Kudelski, S.A., has always been agreeable to changes in the specifications to improve the product. (U)

From August 25, 1980, to August 31, 1980, SAs [redacted] and [redacted] and ET [redacted] met with the following officials of Nagra Magnetic Recorders, Inc., and Kudelski, S.A., in Lausanne, Switzerland:

1. Stefan Kudelski, President and owner of Kudelski, S.A., Lausanne, Switzerland,
2. [redacted] Kudelski, S.A., Lausanne, Switzerland,
3. [redacted] Nagra Magnetic Recorders, Inc., N.Y., N.Y.,
4. [redacted] Electronic Development, Kudelski, S.A., Lausanne, Switzerland,

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and, as needed, numerous other engineers and project managers to discuss specific problems. The objective of these meetings was to produce the very best recording, playback, duplication and enhancing system possible. As this memorandum will record, numerous steps were taken to meet this objective, but a future meeting is required to insure this project meets this objective. (U)

The FBI presently uses the Nagra Model SNST Stereo Tape Recorder and the first discussions centered on any operational or technical problems with this recorder. SA [redacted] and ET [redacted] are the project managers for this recorder. It was noted that the FBI has used the Nagra Model SNST Recorder to make thousands of intelligible recordings during the last three years and that this recorder is performing in an outstanding manner. This experience reflects that the number one failure of this recorder (less than 1/50 percent) has been caused by the microphone wire being pulled from the connector. Ways of correcting this problem on the new recorder were reviewed and it was decided to install a serpentine path on the recorder for the microphone cable. The serpentine path will serve as a strain relief. Any pulling force exerted between the recorder and the microphone cable will be absorbed

~~SECRET~~

Memorandum to Mr. Bayse
Re: MINIATURE TAPE RECORDERS

~~SECRET~~

by this serpentine path and not by the microphone connector. This solution will correct the problem but requires space. It will be necessary to increase the length of the new recorder by 5mm. It should be noted that this will increase and not decrease the cost of producing this recorder. Kudelski, S.A., has agreed to make this change at no cost to the FBI if requested. This change should be approved. (U)

The contract power specification requires two commercially available rechargeable button batteries that can power the recorder for 2 1/2 hours. With additional space, it is now possible to use four size "N" batteries to power the recorder. This will result in the following improvements: (U)

1. Size "N" batteries may be purchased throughout the United States. (U)
2. Size "N" batteries do not require recharging. (U)
3. Size "N" ~~batteries are~~ capable of powering the recorder for 2 1/2 hours of record plus four hours standby. (U)
4. Four size "N" batteries produce six volts DC eliminating the need for a DC to DC converter to convert the 2.4 volts generated by two button cells to 5.0 volts DC. (U)

Size "N" batteries are slightly thicker than button cells and will require the recorder to be 2mm thicker. Kudelski, S.A., has agreed to make this improvement at no cost to the FBI if requested. This improvement should be approved. (U)

The contract specifies that the recorder utilize a tachymetrical signal to cancel "wow" (slow speed variations). Research was conducted to determine the best frequency for this tachymetrical signal. A signal frequency must be selected that will not have many dropouts or any amplitude modulation when recorded on the tape. At first, standard technology and design techniques were followed resulting in selecting a frequency just outside the frequency bandwidth of the recorder (5,000 Hertz). Test measurements indicated that at this frequency, numerous dropouts occurred and the signal amplitude varied according to the smoothness of the tape oxide and the spacing between the record head and tape. This is not acceptable. It was decided to reduce this frequency to approximately 2,000 Hertz. Tests

~~SECRET~~

Memorandum to Mr. Bayse
Re: MINIATURE TAPE RECORDERS

~~SECRET~~

indicated that at 2,000 Hertz, the tachymetrical signal is satisfactory from a dropout and amplitude modulation standpoint. This frequency is in the middle of the frequency bandwidth of the stereo audio tracks and if any crossover occurs, it will be heard when the audio tracks are played back. Kudelski, S.A., agreed to utilize special shielding techniques and to install an electronic cancelling network to reduce this crossover to an acceptable level. Selection of this frequency will increase the cost of producing this recorder, but again Kudelski, S.A., agreed to make this change at no cost to the FBI if requested. This selection should be approved. (U)

Next, the stability of this 2,000 Hertz tachymetrical signal was reviewed. Since the FBI has digital signal processing equipment that may be clocked by this tachymetrical signal during playback, the FBI desires to have this tachymetrical signal be very stable and have very low "jitter." A review of all the alternatives was conducted and it was decided to utilize the [redacted] to generate this tachymetrical signal. Several advantages will result from this choice. (S) (U) b7E

First, if this signal is radiated and anyone detects it, they may believe they have detected a [redacted] and not a tape recorder. (S) (U) ~~SECRET~~

Second, [redacted] is very small and consumes very little battery power. (S) (U) b7E

Third, [redacted] are very accurate and stable, a characteristic needed by the FBI. (S) (U)

This requirement will increase the cost of developing and building this recorder, but Kudelski, S.A., has agreed to add this feature, if requested, at no cost to the FBI. This feature should be added. (U)

Experiments were conducted to determine if this tachymetrical signal should be recorded in the middle of the recording tape or along the edge. When this signal was recorded on the edge of the recording tape, edge damage produced many dropouts and caused amplitude modulation. When this signal was recorded in the center of the recording tape, dropouts and amplitude modulation were negligible. Kudelski, S.A., agreed to record the tachymetrical signal in the middle of the tape. This specification should be added to the contract. (U)

~~SECRET~~

~~SECRET~~

Selection of a [redacted]

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[redacted] and then recorded in the middle of the tape will produce an outstanding recorder. (S) (U)

The contract specifies a recording time of 2.5 hours but this will be increased to 2.5 hours record and four hours standby. (U)

The contract specifies a frequency response of 170 to 4,500 Hertz. Experience indicates that the microphone of this recorder will always be placed under clothing or concealed. Therefore, it was decided to calibrate the record amplifier and microphone to produce a flat frequency response when the sound waves travel through clothing. This is a first for the FBI since this specification is usually measured in free air space. This improvement should be approved. (U)

The contract specifies that the recorder incorporate a compressor as used in the Nagra Model SNST recorder. One of the major concerns of the FBI is amplitude fluctuations between the channels which affects our ability to digitally enhance a tape recording. The compressor of the Nagra Model SNST recorder receives an 80 dB signal from the microphone and amplifier of the recorder and maps this 80 dB signal into the 51 dB of signal space available on the recording tape. This compressor performs this function according to a predetermined mathematical formula. For example, if the electronics divides the incoming signal by two, it would map the 0-to-80 dB signal range into a 0-to-40 dB signal range. During playback, this 0-to-40 dB signal range is multiplied by two, restoring the sounds to their original loudness. Inaccuracies in mapping components can produce amplitude fluctuations. Since the FBI wants amplitude fluctuations to be minimal, a review of a more complex and accurate system was conducted. The new system would generate a signal proportional to the gain of the record amplifier that would be recorded on the tachymetrical track of the recorder. (U)

SA [redacted] has evaluated the Ithaco infinite compressor and expander system which operates on this principle. One of these laboratory quality systems costs over \$5,000 and occupies over 1/4 cubic foot of space. If a unit to perform this function can be developed, designed and constructed to occupy 1/16 cubic inch, it may be useful in this recorder. No one knows if this task can be accomplished in a reasonable time. Kudelski, S.A., agreed to build a breadboard model of this system at no cost to

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Memorandum to Mr. Bayse
Re: MINIATURE TAPE RECORDERS

~~SECRET~~

the FBI if we would evaluate it and determine if this new compressor is better. SA [] agreed that if Kudelski would underwrite the full expense of this development, FBI representatives would travel to Lausanne, Switzerland, and evaluate it. (U)

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The major advantages of the proposed compressor system are: (U)

1. It will have a dynamic range of 90 dB whereas the old system has an 80 dB dynamic range. (U)
2. If the incoming signal has a signal-to-noise ratio (S/N) of 50 dB or lower, it will not be degraded. (U)
3. Amplitude fluctuations caused by homogeneous variations in the recording tape will be reduced by this system. For example, if the output level drops by 3 dB across the tape, the following will happen: (U)
 - a. The level of the audio tracks will be down 3 dB. (U)
 - b. The level of the tachymetrical track will be down 3 dB which will cause the playback gain to be increased. (U)

The compressor with a gain track is superior to a plain compressor from a technical standpoint, but other things must be considered. An intelligent decision relating to this system can only be made after extensive tests. This system warrants further investigation. (U)

The contract specifies less than 2.5 percent third and less than 1.0 percent second harmonic distortion. It was proposed that this specification be changed to less than 5 percent total harmonic distortion. Total harmonic distortion includes all harmonics. This is a more meaningful specification and should be approved. (U)

The contract specifies an indicator to indicate that the power supply, tape speed, bias and audio signals are working. These self-check features require power, space and are subject to misinterpretation. It was proposed that Kudelski, S.A., design

~~SECRET~~

Memorandum to Mr. Bayse
Re: MINIATURE TAPE RECORDERS

~~SECRET~~

a playback pencil to play back the recorded tape. This pencil would resemble a penlite flashlight, would be self-powered and would have the necessary electronics to play back a recorded tape. Playing the tape is the best way of checking a recorder. This change should be approved. (U)

The specifications require that the recorder have a lid that slides back and forth in a groove. This makes it hard to thread the recording tape. It was proposed to have a hinged lid that would open and close like the lid on the present Nagra Model SNST recorder. Kudelski, S.A., agreed to make this change at no cost to the FBI if requested. This change should be approved. (U)

~~related.~~
The contract does not require an audio output connector on the recorder. An audio output should be available to modulate a transmitter or for test purposes. This audio output should be fully indicated. The only specification that may be degraded if this output is accidentally shorted is the recording time. Kudelski, S.A., agreed to add this feature at no cost to the FBI if requested. This change should be approved. (U)

~~TELETYPE~~
The contract does not require an external power input connector on the recorder. This feature would allow the recorder to be powered by a car battery or other power source. Kudelski, S.A., agreed to add this feature at no cost to the FBI if requested. This addition should be requested. (U)

Stefan Kudelski is one of the world's foremost recorder experts and is familiar with all facets of recorder technology. SA [] advised him that several small, portable tape recorder detectors were being sold on the open market in the United States and that the FBI would like to make this recorder invisible to these detectors. Independently, Mr. Kudelski stated that these detectors could be detecting the metal of the recorder, the noise generated by the recorder running, or any radiated field. Mr. Kudelski then advised he believed [] to be the most reliable way of detecting an operating tape recorder and that []

b6
b7C
b7E

[]
(S) (U)

Ways of preventing the []
[] were discussed: (S) (U)

b7E

1. Using a [] (S) (U)

~~SECRET~~

~~SECRET~~

2. [redacted] ~~(S)~~ (U)

3. [redacted] ~~(S)~~ (U)

b7E

It was decided to utilize [redacted]

[redacted] ~~(S)~~ (U)

The first two ways are the standard approach to this problem, but the [redacted] is a new and innovative approach to this problem. This recorder is stereo; therefore, it has two identical record-head tracks. It was decided to design a new record head that would [redacted]

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[redacted] It is projected that three months will be required to have a head for testing. This head could be tested at the same time the infinite compressor is evaluated. Kudelski, S.A., has agreed to build this head at no cost to the FBI and, if effective, to use it on our recorders. SA [redacted] advised Mr. Kudelski that this subject is sensitive to the FBI and requested that our interest not be discussed with anyone. ~~(S)~~ (U)

The contract does not specify the types of drive motor to be used to drive this recorder. A commercially available motor was tested and it was too noisy and did not possess the desired torque. The entire area of motor technology was reviewed and it was decided that no one is presently making a small, high-quality, high-torque, highly reliable motor. It was decided to design and manufacture a motor at Kudelski, S.A. This motor will represent new technology and will be designed to run at very low speed. This feature will reduce the frequency of the noise components and their level. It is conservatively estimated that it would cost \$50,000 to develop this motor. If successful, Kudelski, S.A., has agreed to incorporate this motor in the contract at no cost. (U)

The contract specifies that crosstalk be down 30 dB. Since this contract was negotiated, the FBI has had a Digital Adaptive Filter developed that can subtract noise. The extent to which this filter can remove noise is limited by the crosstalk. The FBI wants this specification improved to 45 dB down. Research was conducted to determine where the crosstalk was entering the

~~SECRET~~

~~SECRET~~

Memorandum to Mr. [redacted] /se
Re: MINIATURE TAPE RECORDERS

system. It was determined that the crosstalk was occurring in the playback head. This is caused by the close proximity of the coil windings. By special playback head design techniques, the crosstalk was reduced to 45 dB. This is an outstanding specification and rivals even the biggest and most expensive recorders. Kudelski, S.A., agreed to utilize these playback heads on the playback unit at no cost to the FBI. (U)

As reflected above, numerous new and innovative features are being proposed for the Nagra Model JBR recorder. Many of these features are untried and have not been implemented in a small, low power, high reliability, professional body recorder. To develop, test, debug and analyze all of these features will require extensive contract monitoring. A two-man contract monitoring trip will be required to monitor these changes. The costs per employee will be \$1,200 air travel plus six days per diem at \$100 per day for a total travel cost of \$3,600. This is a very small price to pay for changes worth more than \$200,000. This travel is necessary and should be approved. (U)

Next, the ~~Design of~~ the Nagra Model PU-1 playback was addressed. (U)

The contract specifies that the PU-1 must be capable of properly playing a tape recording made on the Nagra Model JBR recorder. It does not specify the components to be used. Therefore, all facets of the PU-1 were discussed. (U)

Since the PU-1 must be capable of cancelling "Wow" (low speed fluctuations), many different transport configurations were analyzed for possible use. It was decided to use the fast acting servo system of the Nagra Model "T" audio recorder. This is one of the best and fastest reacting transports available. The present market price of a Nagra Model "T" recorder is in excess of \$10,000. The Nagra Model "T" audio recorder transport can make ± 10 percent speed adjustments within 10 milliseconds. This means that the mechanical transport will be able to cancel wow components below 100 Hertz. (1 divided by 10 milliseconds.) (U)

This should produce a playback of outstanding quality and spectral purity. Kudelski, S.A., agreed to utilize this transport in the PU-1 playback at no cost to the FBI if requested. (U)

~~SECRET~~

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Memorandum to Mr. B. [redacted]
Re: MINIATURE TAPE RECORDERS

The FBI presently owns ten each Nagra SNN, 200 each Nagra SNS and 250 each Nagra SNST recorders that are distributed throughout the field. These recorders are used to make thousands of recordings every year. Many of these tape recordings must be played in court. At the present time, these tapes must be played on a recorder. These recorders do not have a fast forward function, a powered rewind function, a counter to record the location of information on the tape or a playback head with 45 dB of isolation. Since 1974, the FBI has needed a special playback for Nagra tape recordings. (U)

Ways of making the PU-1 a universal playback unit were discussed. This will require a capstan motor, a capstan, a pinch roller and associated electronics. This will significantly increase the cost of producing the playback unit, but will widen its market. SA [redacted] agreed to allow Kudelski, S.A., to market the PU-1 playback with no restriction if Kudelski, S.A., would add this feature at no cost to the FBI. (ONLY THE PU-1 WILL HAVE NO MARKET RESTRICTIONS.) Kudelski, S.A., agreed to add this feature. This significant change should be approved. (U)

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Making the PU-1 playback universal will require that the azimuth of the play head be adjustable, because the azimuth may vary slightly for Nagra Models SNN, SNS, SNST and JBR recorders. This feature will allow the position of the play head to be optimized for each tape. The adjustment will be very small to prevent an untrained operator from significantly misadjusting the play head. This feature will improve the quality of the playback unit. Kudelski, S.A., has agreed to add this feature at no cost to the FBI if requested. (U)

Since 2,048 Hertz will be used on the Nagra Model JBR recorder for the tachymetrical frequency if any cross-over occurs, it will be heard during playback. To prevent this, a 2,048 Hertz nulling adjustment will be added to the PU-1. Kudelski, S.A., has agreed to add this feature at no cost to the FBI if requested. This addition should be approved. (U)

The contract does not specify that the PU-1 have a treble tone control. This feature will enable the operator to adjust the high frequency response of the played back audio signals for maximum intelligibility. Kudelski, S.A., agreed to add this feature at no cost to the FBI if requested. (U)

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Memorandum to Mr. Ba...
Re: MINIATURE TAPE RECORDERS

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The contract does not specify that the playback unit have level meters. The advantages of having level meters were discussed. Peak meters having a range of 43 dB as used on the Nagra Model TRVR recorder are the best available. Kudelski, S.A., agreed to add these meters to the PU-1 playback at no cost to the FBI if requested. (U)

Since the Nagra JBR recorder will be concealed, it may record tapes at low volume. During playback, large amounts of gain may be required. It was proposed to have playback level controls with a range of -40 to +40 dB. This feature (gain) will require expensive amplifiers to amplify low-level tapes. Kudelski, S.A., agreed to add this feature at no cost to the FBI if requested. (U)

Since the FBI must duplicate thousands of Nagra tape recordings, ways of using the PU-1 as a high-speed playback unit were addressed. This feature is not specified in the contract. It was decided to make the PU-1 playback at four times real time. This will reduce to 1/4 the time required to duplicate a Nagra tape recording. Kudelski, S.A., agreed to add this feature at no cost to the FBI if requested. The PU-1 must generate a start signal to activate the recorder that will make the duplicate tape. Kudelski, S.A., agreed to add this feature at no cost to the FBI if requested. (U)

Since the FBI has digital processing equipment that may be clocked by the tachymetrical signal, it will be necessary to have a tachymetrical signal output. Kudelski, S.A., agreed to add the feature at no cost to the FBI if requested. (U)

As recorded above, significant improvements are being prepared for the Nagra Model JBR recorder and the Nagra Model PU-1 Playback Unit.

~~SECRET~~

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OCT 1 1982

WESTERN UNION

KUDELSKI SA CHESEAUX 1.10.82 TX NR 3375

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IS IT THE FBI

Exec AD-Adm.	
Exec AD-Inv.	
Exec AD-LES	
Asst. Dir.:	
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Ident.	
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Laboratory	
Legal Coun.	
Rec. Mgmt.	
Tech. Servs.	
Training	
Off. of Cong. & Public Affs.	
Telephone Rm.	
Director's Sec'y	

E. J. [Signature]



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ATTN.  - TECHNICAL SERVICES

PRESENT DAY SITUATION ON JBR PROJECT:

1. RECORDER TAPE TRANSPORT, PLAYBACK TAPE TRANSPORT AND PLAYBACK ELECTRONICS ARE DONE.

80-781-25

ENCLOSURE

2. NOW COMPLETE SYSTEM MUST BE SYNTHETIZED BY MR. KUDELSKI HIMSELF AND UNTIL THE END OF PHOTOKINA, HE WILL STILL BE COMPLETELY ABSORBED BY THE AMPEX NAGRA VPR 5. THIS PRODUCT WAS EXHIBITED AT IEC AND MR. KUDELSKI PLANS TO SYNTHETIZE THE JBR IN THE 4 WEEKS FOLLOWING PHOTOKINA.

3. UNTIL NOW, 4 IMPORTANT TECHNOLOGIES WERE DEVELOPED:

-A. VAPOR PHASE SOLDERED CHIPS ON FLEXIBLE BOARD PACKAGING. THIS TECHNOLOGY, COMMON TO JBR AND VPR 5 WAS QUITE DIFFICULT TO ESTABLISH AS ALL PRODUCTION EQUIPMENT BOUGHT FOR THIS PURPOSE WAS EXTREMELY NEW AND NOT REALLY DEBUGGED. PRESENTLY, EVERYTHING WORKS, THE LAST PROBLEM, NAMELY SOLDERING QUALITY OF SOT IC'S (PHILIPS, MOTOROLA AND IN THE FUTURE NATIONAL) WILL BE SOLVED VERY SOON.

B. WE ESTABLISHED A TECHNOLOGY FOR USING 70/75 ALLOY (MILLING, STABILIZING, CORROSION PROTECTING AND GROUNDING).

C. TO ENTER INTO JBR DIMENSIONS, WE DEVELOPED A NEW HEAD CONSTRUCTION USING BAND METAL ELASTICITY FOR FASTENING HALF HEADS.

D. WE THINK WE HAVE OVERCOME CONSTRUCTION PROBLEMS, THIS
UNDER CONFIRMATION OF FINAL TESTS.

YOU MAY THUS NOTICE THAT THE TIME AND EFFORT SPENT UPON OUR
VIDEO PROJECT IS THAT MUCH THAT WE WILL SPARE IN THE COMING
MONTHS ON THE JBR.

WE WILL OF COURSE BE VERY GLAD TO WELCOME YOU ON OCTOBER 13,
BUT WE FEEL THAT MORE COULD BE ACCOMPLISHED IF YOU COULD
CONSIDER COMING LATER, IN ROUGHLY MID NOVEMBER.

WITH MY BEST REGARDS


MARKETING DIRECTOR

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24392 NAGRA CH++
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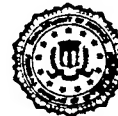
1234 10/01

PLS REPLY VIA TRT

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CALLED
10/10/01
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Memorandum



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Tech. Servs. _____
Training _____
Telephone Rm. _____
Director's Sec'y _____

To : Mr. Bayse *was/m*
From : R. W. Witzel
Subject : MINIATURE TAPE RECORDERS

Date 12/27/82

Confidencer Microphone

REFERENCE: By memorandum R. W. Witzel to Mr. Bayse dated April 18, 1980, captioned as above, the FBI contracted to procure 95 Nagra Model JBR recorders and Model PU-1 playbacks.

PURPOSE: To report and place on record the results of the second contract monitoring trip on FBI Contract #J-FBI-8020.

SYNOPSIS: From November 30 to December 3, 1982, SA's [] and [] met with contract representatives and reviewed the progress of FBI Contract #J-FBI-8020. The following improvements to the recorder are being recommended. b6 b7C

1. Establish the speed of the tape by measuring the RPM of the take-up spindle.
2. Utilize a tape cartridge instead of tape pancakes.
3. Increase the speed of the recorder to 15/16 inches per second, reducing specified record time by 8 minutes (2 hours 22 minutes).
4. Design a special recorder bias shielding top.
5. Utilize three size "N" batteries.
6. Provide a way of installing the batteries without removing the bottom of the recorder.
7. Utilize a new gear tooth design to reduce drive motor noise.

ENCLOSURE

1 - Mr. O'Malley
1 - Mr. Revell
1 - Mr. Bayse
1 - []
Attn: Mr. Chapin
1 - Mr. Witzel
1 - []
1 - []
1 - []

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16 JAN 14 1983

JBR:jmh (9)

(CONTINUED - OVER)

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Witzel to Bayse Memo
RE: MINIATURE TAPE RECORDERS

The specification of the playback unit should be changed to require the playback of a tape cartridge and the addition of a tape counter.

Since delivery is being delayed, the company will be required to submit bi-weekly status reports and work overtime to reduce the delay. Delivery of ten recorders is scheduled for July, 1983, remaining units by the end of 1983. By changing recorder speed to 15/16 inches per second, recorded tapes may be played on existing FBI inventory of larger Nagra recorders with an increase in wow and flutter. When the playback units are delivered, the tapes can then be played with the wow and most flutter canceled. Delivery of recorders is being accented. Production of the playback to proceed only when it does not impact on recorder delivery.

RECOMMENDATIONS: 1. That the listed improvements to the Nagra Model JBR recorder be approved.

APPROVED: Adm. Servs. _____ Laboratory _____
Crim. Inv. _____ Legal Coun. _____
Off. of Cong. & Public Affs. _____
Director _____
Exec. AD-Adm. _____ Int. _____ Rec. Mgnt. _____
Exec. AD-Inv. _____ Inspection _____ Tech. Servs. WAB/CB
Exec. AD-LES _____ Intell. _____ Training _____

2. That the listed improvements to the Nagra Model PU-1 playback be approved.

APPROVED: Adm. Servs. _____ Laboratory _____
Crim. Inv. _____ Legal Coun. _____
Off. of Cong. & Public Affs. _____
Director _____
Exec. AD-Adm. _____ Int. _____ Rec. Mgnt. _____
Exec. AD-Inv. _____ Inspection _____ Tech. Servs. WAB/CB
Exec. AD-LES _____ Intell. _____ Training _____

3. That the delivery date be rescheduled as listed on attached production chart. (10 units July 1983, remaining units by end of 1983).

APPROVED: Adm. Servs. _____ Laboratory _____
Crim. Inv. _____ Legal Coun. _____
Off. of Cong. & Public Affs. _____
Director _____
Exec. AD-Adm. _____ Int. _____ Rec. Mgnt. _____
Exec. AD-Inv. _____ Inspection _____ Tech. Servs. WAB/CB
Exec. AD-LES _____ Intell. _____ Training _____

- 2 -

Kier;
The R&D project for the JBR has been reassigned to
[redacted] Unit Program Leader [redacted] under [redacted]
as 1/6/83, [redacted]

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Witzel to Bayse Memo
RE: MINIATURE TAPE RECORDERS

DETAILS: By sole source negotiated contract, number J-FBI-8020, the FBI contracted with Nagra Magnetic Recorders, Inc., New York, New York, to procure 95 Nagra Model JBR Miniature Stereo tape recorders, 95 Nagra Model PU-1 Playback Units and three Nagra Model TBEC Time Base Error Corrector Units at a total price of 738,302.68 Swiss Francs. Nagra recording equipment is developed and manufactured by Kudelski, S.A., Lausanne, Switzerland.

By memorandum dated November 23, 1982, captioned "Miniature Tape Recorders," it was approved for Contracting Officer's Technical Representative, SA [redacted] b6 [redacted] and Assistant Section Chief [redacted] to travel to Lausanne, Switzerland, to review the progress on this contract. b7c

From November 30, 1982, to December 3, 1982, SA's [redacted] and [redacted] met with the following officials of Nagra Magnetic Recorders, Inc., and Kudelski, S.A., in Lausanne, Switzerland:

1. Stefan Kudelski, President and owner of Kudelski, S.A., Lausanne, Switzerland;

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and, as needed, numerous other engineers and project managers to discuss specific problems. The objectives of these meetings were to produce the very best recording, playback, duplication and enhancing system possible and to expedite production and delivery. As this memorandum will record, numerous steps were taken to meet these objectives, but a future meeting(s) is required to insure this project meets production and delivery schedule.

Witzel to Bayse Memo
RE: MINIATURE TAPE RECORDERS

NAGRA MODEL SNST RECORDER

The FBI presently uses the Nagra Model SNST Stereo Tape Recorder and the first discussions centered on any operational or technical problems with this recorder. SA [] is the project manager for this recorder. Usage of these recorders establishes that if installed within 12 inches of our body transmitter, the audio of the Nagra recorder can be distorted by the RF energy of the body transmitter. RF filters and additional grounding at the input connectors eliminate this problem. A retrofit kit will be developed that can be installed in existing Nagra Model SNST recorders.

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b7C

Several companies are presently manufacturing and marketing tape recorder bias detectors. Ways of reducing bias emission were discussed. Special shielding will be provided to reduce the Nagra Model SNST recorder bias emission.

NAGRA MODEL JBR RECORDER

A working mechanical model of this recorder was analyzed and tested. The following improvements are being recommended:

1. This recorder establishes its tape time speed by measuring the diameter of the supply reel with a wiper arm. The wiper arm pressing against the tape causes the last loop of tape on the supply reel to loosen and develop a slight ripple at the point of contact. This is not satisfactory. Ways of correcting the problem were addressed. By removing the wiper arm and counting the revolutions of the take-up reel, which will be converted to linear tape speed, a significant improvement in speed consistency and accuracy will be obtained and the tape ride-up characteristic eliminated. This represents a significant improvement and should be incorporated in this recorder.
2. Loading the recorder with tape requires a person with a high degree of dexterity. This is unsatisfactory because tape loading in the field would be difficult at best. Ways of producing a loading jig were addressed but proved unsatisfactory. A way of encasing the cassette tape in a cartridge were reviewed and selected as the best way to facilitate loading.
3. The speed of the recorder is specified as approximately 3/4 inches per second. By increasing the speed to 15/16 inches per second, the following improvements will occur:

Witzel to Bayse Memo
RE: MINIATURE TAPE RECORDERS

- a. The frequency response will increase.
- b. The signal-to-noise ratio will improve.
- c. Wow and flutter will be reduced.
- d. Recorded tapes may be played on standard SNST recorders.

The only drawback to this change is that recording time will be reduced to 2 hours and 22 minutes. The contract specifies at least 2 1/2 hours. The improvements greatly outweigh the 8 minute reduction in recording time and should be approved.

- 4. Ways of further reducing or eliminating tape recorder bias radiation were addressed. A top made of special magnetic shielding metal will be made for use when investigative circumstances indicate that detection equipment may be utilized. This top unit will be slightly thicker than the standard top and will not contain a window for viewing tape movement.
- 5. The present contract specified 4 size "N" batteries. Tests of the recorder electronic components indicates that 3 size "N" batteries will be sufficient to power the recorder. This will provide additional space for the electronics and should be approved.
- 6. The present design requires that the bottom cover be removed to change the batteries. The electronics of the recorder will be exposed during this operation and may be damaged by an inexperienced operator. Ways of changing batteries without removing the bottom cover were addressed. It was decided that placing the 3 size "N" cells in a straight line along one side would be the best. In this configuration, only a battery compartment cap would need to be removed to install batteries. In addition, this design would allow the later construction of a 4.5-28 vdc power converter that would be the same size as the 3 size "N" cells and fit into the recorder battery compartment. This would allow the recorder to be powered by the battery of an automobile, plane, and/or other sources.
- 7. The main drive motor of the recorder was subjected to tests to determine its torque and noise generation. This motor has gears that were designed at Kudelski, S.A., that have a different shape, selected specifically to reduce gear mesh noise. This shape completely solved the problem of motor noise. The new design will be utilized in this recorder. The torque of the motor was tested and it greatly exceeded the torque required to transport the tape. An examination of the jewel bearings disclosed that a slight redesign would greatly improve their ability to sustain shock. This redesign will be incorporated.

Witzel to Bayse Memo
RE: MINIATURE TAPE RECORDERS

PLAYBACK UNIT

Since it is being recommended that the recorder utilize a cartridge, then the playback unit will be required to faithfully reproduce these cartridges meeting or exceeding all specifications listed in this contract. Webs will not be required to be provided since they will not be needed.

The contract does not require a counter, but contact with many of the technical agents clearly indicates that a counter will be needed for transcription and courtroom playback functions. Kudelski agreed to add a counter to the playback unit, if requested.

DELIVERY

The present contract delivery date is the end of November, 1982. The problem of delayed delivery was aggressively addressed. The FBI requested that a detailed production schedule be developed; that Kudelski, S.A., forward a bi-weekly status report to include if production is on, behind or ahead of each scheduled deadline, significant accomplishments and any foreseeable events that may impact the new scheduled delivery date; that [] production manager, be designed as the company official to forward the status reports; and that the company place key project personnel in an overtime status to expedite delivery. b6 b7C

The delivery delay is undesirable, but an analysis of the company's willingness to devote full resources, including overtime, to shorten their delay is reasonable. In mid 1982 when the FBI actively advertised its need for small recorders only Nagra Magnetic Recorders responded with a bid. In short, the FBI does not know of any other manufacturers that could produce 10 recorders by the end of July, 1983, and the remaining recorders by the end of 1983.

Since this is a fixed price contract, the delay is costing the manufacturer additional funding which cannot be passed onto the FBI. Therefore, the Company has an interest in completing the contract as quickly as possible.

By changing the recording speed to 15/16 inches per second, recorded tapes may be played on existing FBI inventory of Nagra recorders with an increase in wow and flutter. But when the playback becomes available, the original tapes may be reviewed with the wow and flutter canceled. Production of playbacks will proceed ahead only when it does not impact on the production of the recorders.

Based on concessions made by the company to improve the recorder and playback units and their willingness to place key personnel in overtime at no cost to the FBI, it is being recommended that the FBI agree to the new delivery schedule. (Copy attached).

Enclosure

dec jan feb mar apr may june july aug

2.17.82

1983

dev. mee *

mec part 7#

assy mee

test 66 ①

schematic

des. PCB

3#
PCB
proto

* artwork

② FST #1

③

modif. part

FST #2

assy mee

FST #3

mod mee part 50#

assy 10#

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prod PCB

assy PCB

FST 10#

④

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modif
art work

+ 15#

③ = acceptance
FBI

mini + 250# cartridges + 25 micros with connectors

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Memorandum



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Telephone Rm. _____
Director's Sec'y _____

To : Mr. Bayse

Date January 13, 1983

From : R. W. Witzel

Subject : LIAISON WITH [REDACTED]

Confidencer Microphon

REFERENCE: By memorandum R. W. Witzel to Mr. Bayse dated November 23, 1982, captioned "Miniature Tape Recorders," it was approved for SA's [REDACTED] and [REDACTED] to travel to Lausanne, Switzerland.

PURPOSE: To record and place on record liaison contact with the Swiss Federal Military.

DETAILS: On the evening of November 29, 1982, SA [REDACTED] met with [REDACTED]

RECOMMENDATION: None. For information only.

- 1 - Mr. O'Malley
- 1 - Mr. Bayse
- 1 - Mr. Witzel
- 1 - [REDACTED]
- 1 - Mr. Killian
- 1 - Mr. Woods
- 1 - [REDACTED]

64 MAR 3 1983

JBR:apb (8)

APPROVED:

Director _____
Exec AD Adm. _____
Exec AD Inv. _____
Exec AD LES _____

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Intell. _____
Laboratory _____
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Off. of Cong. & Public Affs. _____
Rec. Mgnt. _____
Tech. Servs. *Witzel*
Training _____

NOT RECORDED
26 JAN 26 1983

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113-7-268-32
Original Filed In

FEDERAL BUREAU OF INVESTIGATION
WASHINGTON, D.C. 20535Date: **1/13/83**TECHNICAL EQUIPMENT SHIPPED FOR
TEMPORARY ASSIGNMENTTo: **SAC CLEVELAND**
ATTN: SA Attn: RE: **CV Teletyp dated 1/11/83**FBI File # **80-781**

Invoice of Contents

1 each 7401-M dialed number display unit
SN 1062 PN 00169343
1 each documentation package

JUN 11 7 41 AM '83
RECEIVED
FBI

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Remarks:

86706001
M1 ATLB
1-17-83
Jme

DOCUMENTATION DATA *mfb* ENGINEERING SECTION ROOM 1B046 (TELELIFT 253)
SECTION/UNIT COST CODE 0855 INVOICE # 1235 01 / 83
SHIPMENT AUTHORIZED BY *[Signature]* EXTENSION 3357 Quantico
SHIPMENT PACKAGED BY *[Signature]* SHIP VIA Air Freight
NUMBER OF CARTONS 2 ENGINEERING SHIPPING # 218

59 JAN 16 1983

BUREAU FILE

Memorandum



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 Telephone Rm. _____
 Director's Sec'y _____

To : Mr. Boyd

Date April 14, 1983

From : R. W. Witzel

Subject: MINIATURE TAPE RECORDERS

Confidence Microphone

REFERENCES: 1) By memorandum R. W. Witzel to Mr. Bayse dated April 18, 1980, captioned as above, the FBI contracted to procure 95 Nagra Miniature Recorders/Playbacks.

2) Memorandum R. W. Witzel to Mr. Bayse dated December 27, 1982, captioned as above reporting the results of the second on-site contract monitoring trip and advising a future contract monitoring trip(s) would be required to insure this project meets production and delivery schedule.

PURPOSE: To recommend that Electronic Engineer (EE) [redacted] and Special Agent (SA) [redacted] travel to Lausanne, Switzerland, to review contractor's progress, to determine if the prototype unit meets specifications, and to determine if the production/delivery schedule is being met.

SYNOPSIS: The FBI has contracted to procure 95 miniature recorders/playbacks at a cost of \$370,000. Mr. Stefan Kudelski, President of Nagra, Lausanne, Switzerland, has advised that the breadboard recorder is available for testing by the FBI and has requested that these tests be conducted from April 26, 1983 to April 28, 1983. EE [redacted] and SA [redacted] have different areas of expertise. Both will be required to adequately test and analyze this recorder. The FBI has an immediate need for these recorders and has taken many steps to expedite production/delivery. The on-site inspection is required to maintain the present production/delivery schedule. Total travel costs will be \$3,900.

RECOMMENDATION: That EE [redacted] and SA [redacted] be authorized to travel to Lausanne, Switzerland, to monitor FBI contract #J-FBI-8020. Total travel expenses will be approximately \$3,900.

APPROVED: _____
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 Tech. Servs. _____
 Training _____

10 APR 21 1983

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(Continued Over)

- 1 - Mr. Groover
- 1 - Mr. Boyd
- 1 - [redacted] (contract 8020)
- 1 - Mr. Witzel

1 - [redacted]
 1 - [redacted]
 1 - [redacted]

Director _____
 Exec AD-Adm. _____
 Exec AD-Inv. _____
 Exec AD-LES _____
 Adm. Servs. _____
 Crim. Inv. _____
 Ident. _____
 Inspection _____
 Intell. _____
 Laboratory _____
 Legal Coun. _____
 Off. of Cong. & Public Affs. _____
 Rec. Mgnt. _____
 Tech. Servs. _____
 Training _____

JBR:app (8)

Memorandum R. W. Witzel to Mr. Boyd
RE: Miniature Tape Recorders

DETAILS: Based on referenced memorandum dated April 18, 1980, the FBI issued a sole source negotiated contract to Nagra Magnetic Recorders, Inc., New York, New York, to procure 95 Miniature Recorders/Playbacks at a total cost of \$370,000. Nagra recorders are developed and built by Kudelski, S.A., Lausanne, Switzerland. Mr. Stefan Kudelski, President of Kudelski, has advised that the breadboard recorder is ready for FBI review and analysis to determine if it meets all specifications. Since the recorder is in the breadboard stage it cannot be forwarded to FBIHQ for review. At the breadboard stage, any necessary changes could be made at minimum expense to Kudelski and/or the FBI. In addition, changes made at this time will have minimum impact on scheduled delivery. Mr. Kudelski has requested that this review be conducted from April 26 - April 28, 1983.

EE [] and SA [] must travel to the factory in Lausanne, Switzerland, to test this new recorder and accurately determine if the projected production/delivery schedule can be met. This review will require many areas of expertise and work experience. EE [] has expertise in technical contract monitoring, audio acoustic work, hybrid circuit technology, and thick and thin film technology. SA [] is the Contracting Officer Technical Representative (COTR), and has expertise in designing miniature recorders, in digital signal processing, in security/countermeasures and in investigative acoustic environments. All of these areas of expertise are needed to successfully review the development of this recorder. The per diem rate in Switzerland is \$86. The economy round-trip air fare to Geneva, Switzerland is \$1,343 per person.

b6
b7c

The above action has been coordinated with Administrative Services Division and Special Agent [] of the Technical Services Division.

FEDERAL BUREAU OF INVESTIGATION
WASHINGTON, D.C. 20535Date: 4/26/83
To: NEW YORKTECHNICAL EQUIPMENT SHIPPED FOR
PERMANENT ASSIGNMENTAttn:

RE: TECH. EQUIP

FBI File # 83-781

Invoice of Contents

1 ea. GOULD AC line conditioner
PN-532814, XXXX SN-21111b6
b7CJohnny U-71342
GBL-55601278

Remarks:

GOULD AC LINE CONDITIONER TO BE USED WITH CM 2212 ~~CALL~~ CALL
DETAIL REORDER. WHEN RECEIVED NOTIFY: FBI ACADEMY, TDS BLDG.
QUANTICO, VA 22135

DOCUMENTATION DATA mgp ENGINEERING SECTION ROOM 1B046 (TELELIFT 253)
SECTION/UNIT COST CODE 855 INVOICE # 1252 / month / year
SHIPMENT AUTHORIZED BY 002 EXTENSION XXXX 115-3357
SHIPMENT PACKAGED BY SHIP VIA _____
NUMBER OF CARTONS XXXX ENGINEERING SHIPPING # _____

BUREAU FILE

FEDERAL BUREAU OF INVESTIGATION
WASHINGTON, D.C. 20535Date: 4/26/83
To: SAN FRANCISCOTECHNICAL EQUIPMENT SHIPPED FOR
PERMANENT ASSIGNMENTAttn:

RE: TECH. EQUIP

FBI File # 82-781

Invoice of Contents

1 ea. GOULD AC line conditioner
PN-532816, SN-21113b6
b7CUnited Airlines-AB-76792542
Johnny U-74282
Delivered on - May 2, 1983

Remarks:

GOULD AC LINE CONDITIONER TO BE USED WITH CM2213 CALL DETAIL
RECORDER. WHEN RECEIVED NOTIFY: FBI ACADEMY, TDS BLDG.
QUANTICO, VA 22135

DOCUMENTATION DATA MPB ENGINEERING SECTION ROOM 1B046 (TELELIFT 253)
SECTION/UNIT COST CODE 2855 INVOICE # 1251 / month / year
SHIPMENT AUTHORIZED BY EXTENSION 115-3357
SHIPMENT PACKAGED BY SHIP VIA
NUMBER OF CARTONS ONE ENGINEERING SHIPPING #

BUREAU FILE

FEDERAL BUREAU OF INVESTIGATION
WASHINGTON, D.C. 20535Date: 4/26/83
To: 2 LOS ANGELESTECHNICAL EQUIPMENT SHIPPED FOR
PERMANENT ASSIGNMENTAttn:

RE: TECH. EQUIP.

FBI File # 80-781

Invoice of Contents

12 ea. GOULD AC line conditioner
PN-532813, SN-21110
532815, 21112b6
b7CUnited Airlines - AB-76792531
Johnny U-74281
Delivered on - May 2, 1983Remarks: GOULD AC LINE CONDITIONER TO BE USED WITH CM2210 CALL DETAIL
RECORDER. WHEN RECEIVED NOTIFY: FBI ACADEMY, TDS BLDG.
QUANTICO, VA. 22135

DOCUMENTATION DATA mgd ENGINEERING SECTION ROOM 1B046 (TELELIFT 253)
SECTION/UNIT COST CODE 0855 INVOICE # 1253 month/year
SHIPMENT AUTHORIZED BY EXTENSION 115-3357
SHIPMENT PACKAGED BY SHIP VIA _____
NUMBER OF CARTONS 10 ENGINEERING SHIPPING # _____

BUREAU FILE

FEDERAL BUREAU OF INVESTIGATION
WASHINGTON, D.C. 20535

Date: 4/26/83

TECHNICAL EQUIPMENT SHIPPED FOR
PERMANENT ASSIGNMENT

To: HI AGO

Attn:

RE: EQUIP

FBI File # 87-791

Invoice of Contents

1 EA. Gould AC line conditioner
PN-532318, SN-21115b6
b7CZantop Airlines - AB-06609901
Johnny U-74283
Delivered on - May 2, 1983

Remarks:

GOULD AC LINE CONDITIONER TO BE USED WITH M2210 CALL DETAIL
REORDER. WHEN RECEIVED NOTIFY: FBI ACADEMY, TCS BLDG.
QUANTICO, VA 22135DOCUMENTATION DATA mfB ENGINEERING SECTION ROOM 1B046 (TELELIFT 253)SECTION/UNIT COST CODE 355 INVOICE # 1254 / month / yearSHIPMENT AUTHORIZED BY EXTENSION 115-3357SHIPMENT PACKAGED BY SHIP VIA NUMBER OF CARTONS ENGINEERING SHIPPING #

86 MAY 16 1983

BUREAU FILE

FEDERAL BUREAU OF INVESTIGATION
WASHINGTON, D.C. 20535Date: **3/23/83**TECHNICAL EQUIPMENT SHIPPED FOR
PERMANENT ASSIGNMENTTo: **Chicago**Attn: SA RE: **Tech. Equip.**FBI File # **80-781** ✓

Invoice of Contents

2 ea. M30T Controller, PN-532407, 305646 SN-NSN, 80039
2 ea. manualb6
b7C

Remarks:

PLEASE RETURN PACKING SLIP, WHEN EQUIPMENT IS RECEIVED.*B. Mail*

DOCUMENTATION DATA WFO ENGINEERING SECTION ROOM 1B046 (TELELIFT 253)
SECTION/UNIT COST CODE 9855 INVOICE # 1226 / /
month / year
SHIPMENT AUTHORIZED BY EXTENSION 115-3367
SHIPMENT PACKAGED BY SHIP VIA P.O.
NUMBER OF CARTONS two ENGINEERING SHIPPING #

MAR 25 1983

BUREAU FILE

FEDERAL BUREAU OF INVESTIGATION
WASHINGTON, D.C. 20535

Date: 3/15/83

TECHNICAL EQUIPMENT SHIPPED FOR
TEMPORARY ASSIGNMENTTo: SAC Detroit
Attn: SA [redacted]

Attn: RE: Technical Equipment

FBI File # 88-80-781 ✓

Invoice of Contents

1 each Time code tape search unit Model M80T SN 30038 Gov # 00532399
1 each Remote controls for search unit no SN or PN.
1 each technical manual

b6
b7CSHIPPED
MAR 16 10 52 AM '83
ENGINEERING
1B132

Remarks:

P:104-2488156
ON-2 WT-31

3-16-83 DW

DOCUMENTATION DATA myb ENGINEERING SECTION ROOM 1B046 (TELELIFT 253)
SECTION/UNIT-COST CODE 0055 INVOICE # 1243 / month / year
SHIPMENT AUTHORIZED BY [redacted] EXTENSION 3357
SHIPMENT PACKAGED BY [redacted] SHIP VIA Freight
NUMBER OF CARTONS 2 ENGINEERING SHIPPING # 211

BUREAU FILE

FEDERAL BUREAU OF INVESTIGATION
WASHINGTON, D.C. 20535Date: **3/15/83**TECHNICAL EQUIPMENT SHIPPED FOR
PERMANENT ASSIGNMENTTo: **SAC WFO**
Attn: **SA**

Attn:

RE: **Technical Equipment**FBI File #**80-781** ✓

Invoice of Contents

1 each Bantam Patch Panel SM 51 no PHb6
b7C

Remarks:

Parker,
Per your request the enclosed panel is for the CM 2210.
Tom

DOCUMENTATION DATA mjb ENGINEERING SECTION ROOM 1B046 (TELELIFT 253)
SECTION/UNIT COST CODE 0055 INVOICE # 1234 /
month year
SHIPMENT AUTHORIZED BY EXTENSION 3357
SHIPMENT PACKAGED BY SHIP VIA FBI Courier - HAND
NUMBER OF CARTONS 1 ENGINEERING SHIPPING # 210 *carried*

BUREAU FILE

FEDERAL BUREAU OF INVESTIGATION
WASHINGTON, D.C. 20535

Date: 5/29/85

To: CHICAGO *KPL*TECHNICAL EQUIPMENT SHIPPED FOR
PERMANENT ASSIGNMENTAttn: SA

RE: TECH EQUIP

FBI File # 80-781

Invoice of Contents

1 ea. TEST SMT, NPN, NSN *KPL*b6
b7C*SHIPPED*
MAY 29 9 40 AM '85
FBI - CHICAGO
FBI - WASH DC

Remarks:

FX- 839 839781
a-1 wt-5

DOCUMENTATION DATA *7xw* ENGINEERING SECTION ROOM 1B046 (TELELIFT 253)
SECTION/UNIT COST CODE 0855 INVOICE # 7692 5 / 85
month year
SHIPMENT AUTHORIZED BY EXTENSION 3077
SHIPMENT PACKAGED BY SHIP VIA FEDERAL EXPRESS
NUMBER OF CARTONS 1985 / ENGINEERING SHIPPING # 5

BUREAU FILE

FEDERAL BUREAU OF INVESTIGATION
WASHINGTON, D.C. 20535Date: 1/18/84
To: HOUSTONTECHNICAL EQUIPMENT SHIPPED FOR
PERMANENT ASSIGNMENTAttn:

RE: TECH EQUIP

FBI File # 80-781

Invoice of Contents

6 ea. LOOP EXTENDERS-SN6229x 06209

5654
05827
05856
06315
5621b6
b7CR 172 457423
1/18/84

Remarks:

WHEN EQUIPMENT IS RECEIVED PLEASE RETURN PACKING SLIP TO:
FBI ACADEMY
TDS BLDG
QUANTICO, VA
ATTN: DOCUMENTATION DATA Kas ENGINEERING SECTION ROOM 1B046 (TELELIFT 253)SECTION/UNIT COST CODE 0855 INVOICE # 1615 / month yearSHIPMENT AUTHORIZED BY EXTENSION 3357SHIPMENT PACKAGED BY SHIP VIA #R172-457-423NUMBER OF CARTONS 3 ENGINEERING SHIPPING # REG. MAIL ~~XXXX~~

BUREAU FILE

FEDERAL BUREAU OF INVESTIGATION
WASHINGTON, D.C. 20535Date: 11/8/83
To: RICHMONDTECHNICAL EQUIPMENT SHIPPED FOR
PERMANENT ASSIGNMENTAttn:

RE: TECH. EQUIP.

FBI File # 80-781

Invoice of Contents

3 EA. LOOP EXTENDERS, SN-5179,5095,5050

b6
b7c

R 172 457 124

Remarks:

WHEN EQUIPMENT IS RECEIVED PLEASE RETURN PACKING SLIP TO:

FBI ACADEMY

TDS BLDG.

QUANTICO, VA. 22135

ATTN: DOCUMENTATION DATA Kao ENGINEERING SECTION ROOM 1B046 (TELELIFT 253)SECTION/UNIT COST CODE 0855 INVOICE # 1287 month yearSHIPMENT AUTHORIZED BY EXTENSION 115-3357SHIPMENT PACKAGED BY SHIP VIA REGISTERED MAILNUMBER OF CARTONS ENGINEERING SHIPPING #

BUREAU FILE

64 NOV 15 1983

Office Memorandum • UNITED STATES GOVERNMENT

TO : Mr. Harbo *Harbo*
 FROM : I. W. Conrad
 SUBJECT: RFMT COUNTERMEASURES

DATE: September 18, 1952

JUNE

Tolson _____
 Ladd _____
 Nichols _____
 Belmont _____
 Clegg _____
 Glavin _____
 Harbo _____
 Rosen _____
 Tracy _____
 Mohr _____
 Tele. Rm. _____
 Nease _____
 Gandy _____

In connection with the installation of RFMT counter-measures on telephones of certain government officials the following method was devised by Special Agents R. L. Stevenson and C. K. Corbett for shorting out the transmitter while the instrument is on the hook, without changing the switch hook or affecting the operation of the 500 A, B, C and D type Western Electric telephones. It should be pointed out that this change should not be employed on instruments used as the second party on message register service. Additional switch contacts will have to be employed in instances of this type of service. It is believed that the individuals for whom the countermeasure will be installed will, because of their importance in the official affairs of state, be supplied with individual line service. The following changes are required:

1. Remove the slate wire from "L2" and "A" and put on "BW".
2. Remove slate yellow from "L2" and put on "L" or "B" if no equalizer.
3. Remove slate white from "C" and put on "L2".
4. Put jumper from "B" in nonequalizer or "L" if in equalizer to "C".
5. Strap "L2" to "A".
6. Remove slate white from "B" in nonequalizer instrument or "L" in equalizer instrument and put on N.C. binding post or tape end.

After the above alterations were completed the instrument was checked in the Laboratory and found to operate as a normal telephone instrument.

ACTION

None. This is an informative progress and should be sent to file.

CKC:vrh

80-781

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 EX-83

13 SEP 23 1952

SEVEN

CNC

V Toll Line AND 500 5000 Instruments

Office Memorandum • UNITED STATES GOVERNMENT

TO : Mr. Harbo

FROM : I. W. Conrad *JWC*

DATE: October 27, 1952

SUBJECT: ~~X~~MICROPHONE-TELEPHONE INSTALLATIONS
~~X~~WESTERN ELECTRIC 500 TYPE INSTRUMENTJUNE

Tolson _____
Ladd _____
Nichols _____
Belmont _____
Clegg _____
Glavin _____
Harbo _____
Rosen _____
Tracy _____
Mohr _____
Tele. Rm. _____
Nease _____
Gandy _____

SUMMARYTOLL LINE AND 500 Series Instruments

On 5-29-52 Executives Conference authorized project to determine alterations required in adapting Western Electric 500 type instruments to various microphone techniques employed by the Bureau at present. Details concerning alterations and remodeling required set forth herein. This instrument does not lend itself to alteration and/or installation of existing Bureau microphone-telephone techniques; however, with alterations outlined herein adequate coverage can be obtained.

PURPOSE

To report the completion of the technical surveillance research project on the Western Electric series 500 telephone instrument by Special Agents Robert Lewis Stevenson and Charles K. Corbett. This project was authorized by the Executives Conference 5-29-52.

SCOPE

This research project included RFMT Countermeasures, the results of which were reported in my memo dated 9-18-52 captioned "RFMT Countermeasures", 3 and 4-wire Microphone-Telephone combinations, DE switch-hook alterations, remodeling required for SPMT installations and RFMT application which application will be the subject of a separate memo.

DETAILS4-WIRE MICROPHONE-TELEPHONE INSTALLATION

The following changes are required to use a Western Electric 500 type instrument for a 4-wire microphone-telephone installation.

Individual Line - Bridge Ringer

Remove black ringer lead from "G" on network terminal and place on "L1" on network terminal.

80-781
80-772
80-760

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EX-110

80-781-3
13 NOV 14 1952

CKC:urh

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5-111
CPC

7-18

10-27-52

Connect the yellow wire from the station mounting cord to the "R", "L" or "GN" on network terminals and the black wire of the station mounting cord to "B" or "L" on equalizer for sets with an equalizer, or "B" on sets without equalizer.

The yellow and black wires in the station mounting cord are the microphone leads.

The red and green wires in the station mounting cord are the telephone service leads and should be connected to "L1" and "L2."

Party Line Service

Connect the 4th wire in a 5 conductor station mounting cord to "R", "L" or "GN" on network terminal and the 5th wire of the 5-wire station cord to "B" or "L" on equalizer for sets with an equalizer or "B" on sets without equalizer.

The 4th and 5th wires of the station mounting cord are the microphone leads. The red, green and yellow wires of the station mounting cord are to be connected on the same terminals as the same colors of the 3-wire station mounting cord.

3-WIRE MICROPHONE-TELEPHONE INSTALLATION

The following changes are required to use a Western Electric 500 type instrument for a 3-wire microphone-telephone installation. This technique should not be employed unless the subscriber's ringer is bridged across the line.

Remove the black ringer lead from "G" on network terminal and place on "L1" on network terminal.

Install jumper from "B" or "L" on equalizer for sets with an equalizer or "B" with sets without equalizer to "G" on network terminal. Install jumper from "R" to "L1".

The yellow wire in the station mounting cord should be connected to "G" on network terminal.

The microphone leads are the yellow and green wires of the station mounting cord.

The red and green wires are to be connected to their usual points and are for telephone service.

10-27-52

DE SWITCH HOOK

The following alterations are required to use a Western Electric 500 type instrument for a DE switch hook installation. This type of installation should be used on a line where microphone coverage is desired and there are more than one instrument on the subject's line or for microphone coverage on party line telephones.

Bridge Ringer

Remove slate yellow from "L2" on network terminal and put on "L" or "B" on equalizer for sets with an equalizer or "B" with sets without equalizer.

Remove slate white from "L" on equalizer or "B" on sets without equalizer (if too short tape end and conceal) and "C" and put on "L2" on network terminal.

Remove slate from "L2" on network terminal and put on "G" on network terminal.

Remove slate from "A" on network terminal and put on "a" on network terminal.

Remove black ringer wire from "G" on network terminal and put on "L1" on network terminal.

Install jumper from "L2" on network terminal to "A" on network terminal.

Install jumper from "L" on equalizer of sets with equalizer or "B" on sets without equalizer to "G" on network terminal.

The yellow from the mounting cord should be connected to "g" and the black wire in the mounting cord should be connected to terminals "RW" on the equalizer or the handset terminal block.

The yellow and black wires are the microphone leads.

The red and green wires are connected to their usual points and are for telephone service.

Party Line Service

Remove slate yellow from "L2" on the network terminal and put on "L" or "B" on equalizer for sets with an equalizer or "B" on sets without equalizer.

10-27-52

Remove slate white from "G" on network terminal and "L" or "B" (if too short tape end and conceal) and put on "L2" on network terminal.

Remove slate from "A" and "L2" on network terminal and connect to 4th wire in station mounting cord.

Install jumper from "L2" to "A" on network terminal.

Install jumper from "L" on equalizer for sets with equalizer or "B" on sets without equalizer to "G" on network terminal.

Connect 5th wire in mounting cord to "BW" on the equalizer or the handset terminal block.

The 4th and 5th wires of the station mounting cord are the microphone leads.

The red, green and yellow wires of the station mounting cord connect to their usual points and are for telephone service.

SPMT

The following must be completed in order to remodel the network of a Western Electric 500 type instrument so that the instrument may be used on a surveillance employing the SPMT unit.

Disconnect all leads to network. Drill out mounting rivets holding network to telephone base.

The complete network must be removed from the case. This is done by bending back the 3 crimped lips protruding above the network metal casing.

The complete network is then put in a container with sufficient water to cover approximately 3/4 of the metal casing and the water brought to a boiling point or until the wax has melted making it possible to remove the plastic terminal board of the network as well as the internal components from the metal casing.

Upon completion of the above a jumper is placed from "F" to "L1" and a jumper resistor from "G" to "L2" or "A" and a .25 MFD 150 W.V. condenser in SP parallel with the resistor. The jumper and the resistor condenser combination should be concealed among the components underneath the network terminal board.

10-27-52

When repotting the remodeled network Castone should be employed as a filler in place of the original sealing wax. To conceal the alterations a small amount of the sealing wax should be installed in the hole in the center of the plastic network cover.

The complete network should be reinstalled on the telephone base with all of the wires being connected to the original points.

In order to complete the surveillance the operation and installation procedures previously outlined in detailed instructions to the field entitled "Manual Reset Single-Pair Microphone-Telephone Unit" should be followed.

CONCLUSIONS

The Western Electric 500 type telephone instrument represents an improvement in design and transmission qualities over previous instruments heretofore placed on the market by the telephone industry. It is obvious from the foregoing alterations which are necessary to provide coverage desired as a present day investigative technique that this instrument does not lend itself to ease of alteration and/or installation.

These experiments reveal the best microphone coverage was obtained with 8 milliamperes of current flowing in the microphone circuit. For current lower than this value microphone coverage was curtailed and with current exceeding this value the inherent carbon "hiss" became excessive in proportion to the increase in the area covered.

ACTION

For information only. No action required.

P

Office Memorandum • UNITED STATES GOVERNMENT

TO : Mr. Harbo *PH*

FROM : I. T. Conrad *for* JUNE

SUBJECT: MICROPHONE-TELEPHONE INSTALLATIONS
WESTERN ELECTRIC 500 TYPE INSTRUMENT

DATE: October 30, 1952

REFERENCE

TOLL Line And FIVE NAUGHT NAUGHT
Series Instruments

Reference is made to my memo dated 10-27-52 relative to the above-entitled matter.

DETAILS

In connection with a research project entitled "Technical Surveillance Research" approved by the Executives Conference on 5-20-52, SA's R.L. Stevenson and C.K. Corbett explored the possibility of utilizing the RFMT unit on the 500 type Western Electric telephone instrument. This type instrument has been recently released to the public by the Bell System.

It was determined that the RFMT unit will work on this type of instrument if a jumper is placed between "L1" on the network terminal board and "F" on the network terminal board or between "L2" on the network terminal board and "L" on the equalizer or "B" if no equalizer is used. This jumper shorts out one of the switch contacts which is normally opened when the handset is resting on the cradle. A similar reaction has been experienced when the RFMT unit was employed on other Western Electric telephones which broke both sides of the line when the handset is resting on the cradle.

From the above it appears that the RFMT technique using present frequencies can be effective on telephone instruments which break both sides of the line, only if a jumper is employed in the telephone instrument. The use of the RFMT unit would lose its value if alteration to the telephone instrument is required before the unit can be installed. If access to the instrument is possible it ordinarily would be to the Bureau's advantage to use the SPMT unit as it does not have the high security classification presently assigned the RFMT unit.

RECOMMENDATION

Accordingly, it is recommended that 10 additional man days be authorized to explore the advantages and disadvantages of extending the upper frequency limits of the RFMT unit and to determine whether or not increasing the frequency the unit can be employed on Western Electric instruments which break both sides of the line.

CKC:rh

80-781

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Tolson _____
Ladd _____
Nichols _____
Belmont _____
Clegg _____
Glavin _____
Harbo _____
Rosen _____
Tracy _____
Mohr _____
Tele. Rm. _____
Nease _____
Gandy _____

I agree
11/3/52Exec. Conf. 11/16/52
att5-RW
17-RH

Office Memorandum • UNITED STATES GOVERNMENT

TO : Mr. Tolson ✓ J U N E

FROM : Executives Conference

SUBJECT: RADIO FREQUENCY MICROPHONE-
TELEPHONE DEVICE

DATE: November 4, 1952

0 TOLL Line And Five Naught NAUGHT
Series Instruments

On November 4 the Conference composed of Messrs. Ladd, Glavin, Tracy, Mohr, Mason, Gearty, Rosen, Belmont and Harbo was advised that the radio frequency microphone-telephone unit devised by the Laboratory does not function on the new type of telephone instrument which has been recently released to the public due to minor differences in the electrical circuit.

The Conference unanimously concurred in the Laboratory proposal that ten man days be authorized to conduct necessary experiments employing higher radio frequencies to ascertain whether the RFMT unit can be modified so that it can be employed on the types of telephone instruments on which it will presently not operate successfully.

cc - Mr. Mohr
Mr. H. H. Clegg
RTH:VH

Tolson _____
Ladd _____
Nichols _____
Belmont _____
Clegg _____
Glavin _____
Harbo ✓
Rosen _____
Tracy _____
Mohr _____
Tele. Rm. _____
Nease _____
Gandy _____

Incomplete
Page 1

RECORDED - 10 80-781-5

DEC 15 1952

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7-*RH*
80

Office Memorandum • UNITED STATES GOVERNMENT

TO : Mr. Harbo *HB*

DATE: December 16, 1952

FROM : I. W. Conrad *IWC*JUNE

SUBJECT: RFMT COUNTERMEASURES

Toll Line and Five Naught Naught Service Section to

Reference is made to memo dated 9-18-52 captioned as above and setting forth the changes necessary for the installation of RFMT countermeasures on 500 type telephones. It has been determined that on the Western Electric 500D telephone wire color codes and other changes reduce to a minimum the alterations required to install a countermeasure. The changes are as follows:

1. Remove slate from "L2" and put on "R" of the network.
2. Remove slate yellow from "L2" and put on "C" of network.
3. Remove slate brown from "C" network and put on "L2".

Steps 4, 5 and 6 have been eliminated.

ACTION

None. This is an informative Bureau report and should be sent to file.

CKC:vrh *vrh*

80-781

Tolson _____
Ladd _____
Nichols _____
Belmont _____
Clegg _____
Glavin _____
Harbo _____
Rosen _____
Tracy _____
Mohr _____
Tele. Rm. _____
Nease _____
Gandy _____

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12-24-52
AP

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R 30
CNC

Office Memorandum • UNITED STATES GOVERNMENT

TO : Mr. Harbo *RB*DATE: September 11,
1953FROM : I. W. Conrad *[Signature]*

JUNE

Tolson	_____
Ladd	_____
Nichols	_____
Belmont	_____
Clegg	_____
Glavin	_____
Harbo	_____
Rosen	_____
Tracy	_____
Gearty	_____
Mohr	_____
Winterrowd	_____
Tele. Room	_____
Holloman	_____
Sizoo	_____
Miss Gandy	_____

SUBJECT: *0* ~~RADIO FREQUENCY MICROPHONE TELEPHONE~~

TOLL LINE AND 500 Series Instruments

sal Executives Conference 11-4-52 authorized 10 man days to conduct necessary tests to determine whether the RFMT unit could be modified to provide successful operation on certain types of telephone instruments on which the device will presently not operate. The most important such instrument is the so-called model 500 which is the new type instrument currently being placed in public service by the telephone company. *[Signature]*

These experiments now have been completed and it has been concluded that the RFMT cannot be made to work on the model 500 instrument without modification of the instrument itself. Of course, the necessity for modification of the telephone instrument defeats the primary value of the RFMT device, namely its ability to provide microphone coverage without access to the premises. Based on the study made, there appears to be no immediate prospect for such coverage where model 500 instruments and others of similar circuitry are involved.

ACTION

This memorandum completes action on the approved research project and is submitted for record purposes only.

IWC:vrh *[Signature]*

80-781

cc - 80-760

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28

7-RB

10-5-53

5
16
SAC, Chicago

REC- 54

July 17, 1963

b7D

Director, FBI (80-781) - 13

JUNE

**MODIFIED "CHEESEBOX"
TECHNICAL EQUIPMENT**

Reurairtel 7/10/63, transmitting a modified "cheesebox" obtained from a confidential source with the Illinois Bell Telephone Company in Chicago. The examination of this device in the Laboratory indicates that it will probably be quite effective on telephone lines where polarity is never reversed. However, in some areas such as Washington, D. C., the telephone company battery is reversed for one reason or another and such a device as this modified "cheesebox" would not be effective.

Photographs of the unit have been made for record purposes and a circuit diagram has been prepared.

The Bureau appreciates your interest in forwarding this device to the Laboratory for examination.

The modified "cheesebox" is being returned to you *Returned*
by registered mail.

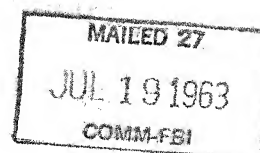
7/22/63

Registered # 718 658

CORBETT
7114

Tolson _____
Belmont _____
Mohr _____
Casper _____
Callahan _____
Conrad _____
DeLoach _____
Evans _____
Gale _____
Rosen _____
Sullivan _____
Tavel _____
Trotter _____
Tele. Room _____
Holmes _____
Gandy _____

ca
CKC:sfs (9)



6 JUL 25 1963
MAIL ROOM ☒ TELETYPE UNIT ☐

F B I

Date: 7/10/63

Transmit the following in _____
(Type in plain text or code)Via A I R T E L

(Priority or Method of Mailing)

TO : DIRECTOR, FBI

ATTN: FBI LABORATORY
ELECTRONIC SECTION

FROM: SAC, CHICAGO [REDACTED]

b7D

~~MODIFIED "CHEESEBOX"~~
TECHNICAL EQUIPMENT"JUNE"*Confidence microphone*

There is being transmitted herewith a modified "cheesebox" obtained from a confidential source with Illinois Bell Telephone Company, Chicago. The original "cheesebox" designed and used by "bookies", utilized remote connections with telephones installed, the services connected through the "cheesebox". The modification is similarly attached to any multiple of both the subscriber's and a nearby installed monitor telephone. Subscriber's line is connected to terminals near switch end of box and monitor line connected to opposite end of box. Polarity, to ground, must be carefully observed and connections made as indicated on box.

Test in Chicago through the switchboard and individual lines with the unit installed as described, enabled the monitor number to be dialed, and automatically cutting into monitor subscriber's incoming and outgoing communications. The "On-off" switch, when in "on" position simulates original "cheesebox" setup. "Off" position is the new monitor setup. Switch in "On" position results in busy signals when the phone number is dialed, either that of subscriber, or the monitor number. The monitor setup does not ring the monitor phones yet the circuitry places the number on the line, as a third party on the conversation.

This setup and adaptation is not to be discussed with any other telephone company officials, personnel or employees. The box was loaned to the Chicago office for examination and necessary testing, and for information of the Bureau. The unit must be returned by Chicago office in

- cc retained - Electronics*
- 3 - Bureau (AMSD)
 - 1 - Package
 - 1 - Chicago

PPS:sck
(5)

Approved: M J [Signature]
Special Agent in Charge

Sent 22 JUL 23 1963

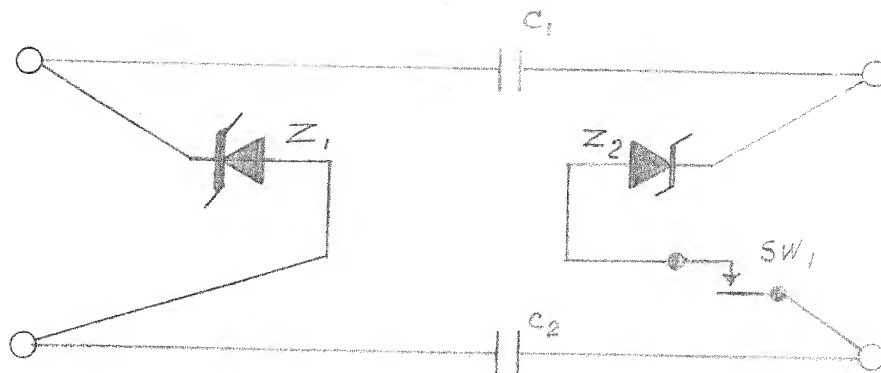
ENCLOSURE

REC-54
7-17-63
80-781-13
STDC. MAIL-RM.

CG

b7D

very immediate future and it is requested that the Laboratory examine unit, make necessary tests, and immediately return to Chicago by most expeditious means, attention S-4 desk.



Z_1, Z_2

ZENER DIODE
MOTOROLA NUMBER 10M56Z
JEDEC TYPE 1N2999
 V_Z VOLTS 56
 I_{ZT} MA 45

C_1, C_2

.1 MFD 200V
SPRAGUE

SPECIAL "CHEESE BOX"

SUBMITTED BY CHICAGO